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547

VOL. XIV. NO. 21.

NOV. 1, 1886.

PEACE ON EARTH
GOD WILL FURNISH IT



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DEPARTMENT OF AGRICULTURE

CLEANING
IN

BEE CULTURE

DEVOTED
TO
BEEKEEPING

& HOME INTERESTS.

MEDINA, OHIO
BY
A. ROOT

TERMS, ONE DOLLAR PER YEAR.

YAKKING, DUNELL, & CO.

ENTERED AT THE POST OFFICE, MEDINA, OHIO, AS SECOND-CLASS MATTER.

ADVERTISEMENTS.

We require that every advertiser satisfy us of responsibility and intention to do all that he agrees, and that his goods are really worth the price asked for them. Patent-medicine advertisements, and others of a like nature, can not be inserted at any price.

Rates for Advertisements.

All advertisements will be inserted at the rate of 20 cents per line, Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

On 10 lines and upward, 3 insertions, 5 per cent; 6 insertions, 10 per cent; 9 insertions, 15 per cent; 12 insertions, 20 per cent; 24 insertions, 25 per cent.

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On 100 lines (whole column) and upward, 1 insertion, 10 per cent; 3 insertions, 15 per cent; 6 insertions, 20 per cent; 9 insertions, 25 per cent; 12 insertions, 33½ per cent; 24 insertions, 40 per cent.

On 200 lines (whole page), 1 insertion, 15 per cent; 3 insertions, 20 per cent; 6 insertions, 25 per cent; 9 insertions, 30 per cent; 12 insertions, 40 per cent; 24 insertions, 50 per cent.

An additional discount of 10 per cent, where *electro-types* are furnished. A. I. Root.

CLUBBING LIST.

We will send GLEANINGS—

With the American Bee-Journal, W'y	(\$1.00)	\$1.75
With the Bee-keepers' Magazine.	(1.00)	1.75
With the Canadian Bee Journal, W'y	(1.00)	1.80
With all of the above journals,		3.75

With American Agriculturist,	(\$1.50)	2.25
With American Apiculturist,	(\$1.00)	1.75
With American Garden,	(\$2.00)	2.25
With the British Bee-Journal,	(1.90)	2.90
With Prairie Farmer,	(1.50)	2.35
With Rural New-Yorker,	(2.00)	2.90
With Scientific American,	(3.20)	3.50
With Ohio Farmer,	(1.00)	1.90
With Fruit Recorder and Cottage Gard'r,	(.50)	1.40
With U. S. Official Postal Guide,	(1.50)	2.25
With Sunday-School Times, weekly,	(2.00)	2.25

[Above Rates include all Postage in U. S. and Canada.]



You can not look over the back No's of GLEANINGS or any other Periodical with satisfaction, unless they are in some kind of a Binder. Who has not said—"Dear me, what a bother—I must have last month's Journal and it is nowhere to be found"? Put each No. in the Emerson Binder as soon as it comes, and you can sit down happy, any time you wish to find anything you may have previously seen, even though it were months ago.

Binders for GLEANINGS (will hold them for one year), gilt lettered, for 60 cts.; by mail, 12 cts. extra. Ten, \$5.00; 100, \$45.00. Table of prices of Binders for any Periodical, mailed on application. Send in your orders. A. I. Root, Medina, Ohio.

The Canadian P. O. authorities refuse to receive these through the mails, as they exceed the proper weight for merchandise.

FLAT - BOTTOM COMB FOUNDATION.



High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS.

51fd Sole Manufacturers,
SPROUT BROOK, MONT. CO., N. Y.

Cash for Beeswax!

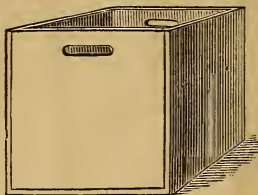
Will pay 20c per lb. cash, or 25c in trade for any quantity of good, fair, average beeswax, delivered at our R. K. station. The same will be sold to those who wish to purchase, at 25c per lb., or 30c for best selected wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by express.

A. I. ROOT, Medina, Ohio.

POTATO-BOXES

(TERRY'S).



These are made of basswood, bound with galvanized iron. The galvanized iron gives strength, and the basswood strength and lightness. These hold exactly a bushel when level full, and may be piled one on top of another. Although they are made especially for potatoes, they can be used for fruit, vegetables, picking up stones on the farm, and a thousand other purposes. When piled one above the other, they protect the contents from the sun and rain; and from their shape a great many more bushels can be set into a wagon than where baskets are used. They are also much more substantial than baskets.

Price 25 c each; 10, \$2.25; 100, \$20.00. In the flat, including nails and galvanized iron, \$1.75 for 10; 100, \$16.50; 1000, \$150.

A. I. ROOT, MEDINA, OHIO.

RUBBER STAMPS

DATING, ADDRESSING, BUSINESS, LETTER HEADS, ETC.



No. 1.



No. 3.



No. 2.

self and all who do business with you a "world of trouble." I know, you see.

We have those suitable for druggists, grocery-men, hardware dealers, dentists, etc. Send for circular.

A. I. Root, Medina, O.

ADANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL. See advertisement in another column. 3tfbd

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CONVENTION NOTICES.

Nebraska bee-keepers will meet for their next annual session in Lincoln, Neb., on the second Wednesday in Jan., 1887.
H. N. PATTERSON, Sec.

The Bee-keepers' Association of Hamilton and Tipton Counties, Indiana, will be held at Westfield, Saturday, Nov. 6, 1886. All interested in bee-keeping are invited to come. Bring your baskets well filled, and stay all day, and help make this one of the most interesting sessions the Association ever held.

ILLINOIS CENTRAL BEE-KEEPERS.

In consideration of the meeting at Quincy, Ill., on the 19th, 20th, and 21st of Oct., at the laying of the corner-stone of the Soldiers' Home, the Executive Committee of the Illinois Central Bee Keepers' Society have postponed the yearly meeting at Mt. Sterling, Ill., from Oct. 19th and 20th to Nov. 24th and 25th. The prospects for a grand success are certainly good, as many active and prominent apiarists and specialists have signified their intention to be present. The meeting will be held at the Court-House, and hotel accommodations are good. We are negotiating with the landlord for rates at the City Hotel, which we think will not exceed \$1.00 per day.
J. M. HAMBAUGH, Sec.

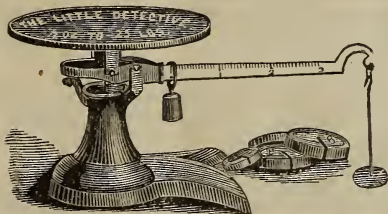
CARNIOLAN QUEENS & BEES A SPECIALTY.

Send for Descriptive Price List and Circular.

9tfd **H. F. SHANNON**, Clarksburg,
(Formerly of Spring Hill.) **Decatur Co., Ind.**

Headquarters in the South. FACTORY OF BEE-HIVES, ETC. EARLY NUCLEI, ITALIAN QUEENS.

17tfd **P. L. VIALLO**N, Bayou Goula, La.



"Little * Detective" SCALE FOR \$2.00.

This is the same scale that we have sold for years at \$2.50. It weighs from 1/4 oz. to 25 lbs., and does it so accurately that they are used largely by postmasters in weighing letters. What can be handier for weighing out small lots of honey than one of these? They weigh 10 lbs., boxed ready to ship, and we can sell them for \$2.00; with a tin scoop, 50 cts. more; with double beam, \$3.00; tin scoop added, 50 cts. more. If sent alone, they will probably go cheaper by express.

A. I. ROOT, Medina, O.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in every issue.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delays as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.

*H. H. Brown, Light Street, Columbia Co., Pa. 1tfd

*Paul L. Viallon, Bayou Goula, La. 17tfd

*S. F. Newman, Norwalk, Huron Co., O. 17tfd

*D. G. Edmiston, Adrian, Len. Co., Mich. 17tfd

*S. G. Wood, Birmingham, Jeff. Co., Ala. 17tfd

*E. Kretschmer, Coburg, Mont. Co., Iowa. 17tfd

*Jos. Byrne, Ward's Creek, East Baton Rouge 17tfd

J. W. Winder, Carrollton, Jeff. Par., La. 3tfd

*E. Burke, Vineennes, Knox Co., Ind. 3-1

C. C. Vaughn, Columbia, Tenn. 15tfd

Bloomington, Ill. 15tfd

J. B. Hains, Bedford, Cuyahoga Co., O. 15tfd

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La. 15tfd

C. W. Costellow, Waterboro, York Co., Me. 1-23

R. B. Leahy, Higginsville, Laf. Co., Mo. 15tfd

E. Kretschmer, Coburg, Montgomery Co., Ia. 15tfd

C. P. Bish, Petrolia, Pa. 19-23

HOW TO WINTER BEES.

Essays by James Heddon, Prof. Cook, G. M. Doolittle, A. E. Manum, G. W. Demaree, J. E. Pond, Jr., J. H. Martin, C. W. Dayton, and P. R. Russell, all appear in the October number of the American Apiculturist. Send 10c in stamps for a copy.

Address **AMERICAN APICULTURIST**,
2tfd Wenham, Mass.

**DADANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL.** See advertisement in
another column. 3btf

FOR SALE!

350 acres good table land, 1/4 cleared and in a good state of cultivation; the rest tolerably well timbered; finely situated for stock, fruit, or grain farming; an abundance of fruit and good spring water; good house with 9 rooms, garret and cellar, a large barn, and other necessary buildings. Price \$7000.

Also 500 acres adjoining the above, 50 acres cleared, a log house and stable, some fruit, 200 acres of mountain land; the rest nice for farming. Price \$3000. Either farm will divide well, and is a good site for an apiary. For particulars address
17-21d **H. J. STREBY**, Paw Paw, W. Va.

HONEY COLUMN.

CITY MARKETS.

KANSAS CITY.—*Honey*.—The market is good for all grades, and sales are large, receipts are very good, and prices are steady with a firm feeling.

White clover, 1-lb. sections	13@14
" " 2-lb. "	11@12
" " ½-lb. "	14@15
Dark " 1-lb. "	10@12
" 2-lb. "	9@10
California, 1-lb. "	9@11
Extracted, white clover	6@7
" dark	4@5
" white sage, California	5½
" amber	5
Beeswax,	20@22

Oct. 23, 1886. CLEMONS, CLOON & Co.,
Cor. 4th and Walnut St's, Kansas City, Mo.

BOSTON.—*Honey*.—Honey is selling well, but would sell better if weather were colder. No change in prices.

Oct. 22, 1886. BLAKE & RIPLEY,
57 Chatham St., Boston, Mass.

MILWAUKEE.—*Honey*.—The market here is firm on choice quality of comb honey in sections, also on extracted. Choice white 1-lb. sections, 12½@13; choice white in 2-lb. sections, 12@12½. Dark, not wanted. Extracted in bbls. or ½-bbls., choice, 6½@7; extracted in tin, 7@7½; dark, in bbls. and ½bbls., 5@5½. Beeswax, nominal, 25c. A. V. BISHOP.

Oct. 22, 1886. 142 W. Water St., Milwaukee, Wis.

NEW YORK.—*Honey*.—There is a first-class demand for comb honey, especially for the finer grades. We are almost daily receiving shipments of various descriptions and quality. We make no change in our quotations. We have no demand whatever for extracted buckwheat honey owing to the fact that California extracted white and amber honey is selling at very low figures.

Oct. 22, 1886. THURBER, WHYLAND & Co.,
Read and Hudson Sts., New York.

CINCINNATI.—*Honey*.—There is no change in the market, worthy of note. A fair trade is done in comb honey, and small packages of extracted honey for table use, while the demand is slow from manufacturers. No change in quotations. Extracted honey brings 3½@7c on arrival, and 12@15c is paid for nice comb honey in a jobbing way. There is a good demand for beeswax. We pay 22c per lb. for good yellow.

Oct. 21, 1886. CHAS. F. MUTH & SON,
Cincinnati, Ohio.

CLEVELAND.—*Honey*.—The market has not improved in the past few weeks; sales are very slow at 13@15c for best 1-lb. sections of white; other grades almost unsaleable at any price. Extracted dull at 6 cts.

Oct. 20, 1886. A. C. KENDEL,
115 Ontario St., Cleveland, O.

ST. LOUIS.—*Honey*.—We note a better demand for choice white-clover honey in 1-lb. sections. It sold readily to-day at 13@14c. Good honey. Spanish needle, etc., 12@12½ in 1-lb. sections. Extracted and strained honey, no change. California holds us down. We are offering white sage at 5c, and amber at 4c in cans, by carload lots.

Oct. 22, 1886. WESTCOTT & HALL,
108 and 110 Market Street.

FOR SALE.—White clover and basswood honey. Extracted, at 7c in barrels holding about 370 lbs. each, on cars here, and no charge for the barrels. In 5 and 10 barrel lots, will pay freight to any place under 300 miles. Also several barrels of a darker grade that we will sell at 6c. Our honey is thick and nice.

E. FRANCE & SON, Platteville, Wis.

FOR SALE.—5000 lbs. of extracted white clover and basswood honey, in oak iron-bound barrels, holding about 370 lbs. each, delivered on board of cars. Price 7c. Also a few barrels of dark at 6c. No charge for the barrels.

PHILIP H. FELLOWS, Brodhead, Wis.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

ATTENTION!

Dealers and Manufacturers

We are prepared to supply you with sections for the coming season at bed-rock prices. Write us.

21tfdb G. B. LEWIS & CO.,
WATERTOWN, WIS.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfld

40-Horse-Power Engine for Sale.

Our new automatic cut-off 40-horse-power engine is now driving the machinery in all our buildings. Now, we want to dispose of our old 40 horse-power engine which has done such faithful work for us for the last eight years. It is a standard plain engine, Lord & Bowler make, 12x20, with a 9-foot balance-wheel and a 6-foot fly-wheel. We will offer it, put in good repairs, for \$350.00. We will throw in the stone upon which the bed-plate is bolted, free of charge. For further particulars, write us. Whom shall we hear from first?

A. I. ROOT, Medina, Ohio.

Recent Additions to the Counter Store.

THREE-CENT COUNTER.

1 | SAFETY PINS, per doz., 1 inch long, and little beauties..... | 28 | 2 50

FIVE-CENT COUNTER.

1 | MARKING-CRAYONS, BLACK, RED, or BLUE, | 40 | 3 50
Four inches long. These are invaluable for marking packages; and for bee-keepers it is just the thing for marking your hives. You can rub the marks from a painted or glazed surface but not from a rough one.

1 | NEEDLES, either SHARPS or BETWEEN. | 30 | 2 50
Any of the following numbers, 1, 2, 3, 4, 5, 6, 7, 1-6, 4-8, 3-9, or 3-10; 25 helix needles, cloth-stuck, in a paper; 3 papers for a dime.

3 | POCKET-MIRROR, zinc, 3 in. diameter | 40 | 3 50
The cover is so arranged that it can be hinged back as a stand for the mirror.

1 | SAFETY PINS, per doz., 1½ in. long.... | 35 | 3 00
Same as the 3c ones, but larger.

13 | KNIFE-TRAY, 7x12..... | 90 | 8 50
A beautiful ash tray with 2 compartments and a walnut handle. It is glued and nailed, is very neat, strong and useful.

A. I. ROOT, Medina, Ohio.

KIND WORDS FROM OUR CUSTOMERS.

Inclosed find \$1.00, for which please send GLEANINGS. It is like doing without tobacco to do without GLEANINGS. ALLEN BRYAN.

New Sharon, Ia., Sept. 30, 1886.

The goods shipped by you on the 3th came to hand all right. I am delighted with the wheelbarrow. It is a "daisy," and no mistake. I tell you, it astonishes the natives. S. A. STRIKER.

Manchester, Va., Sept. 30, 1886.

Goods arrived. Every thing is satisfactory, especially the lawn-mower. I could not have bought one of that size here for less than \$10.00. It works very well. J. A. GREEN.

Dayton, La Salle Co., Ill.

A SCHOOLTEACHER'S OPINION OF GLEANINGS.

I am glad, indeed, that you are in the supply-business, for I am certain that, in no other way, could you afford to give so much reading-matter for a dollar. I have been a printer, and know about what so much matter costs. May success continue with you. I wish to express my sympathy, too, for your troubles with foul brood. May it never return to your apiary, is undoubtedly the earnest wish of your 6000 readers. With a school of 400 scholars to look after, I still find time to manage my little apiary of 26 colonies. Z. T. HAWK.

Denison, Ia., Oct. 15, 1886.



Vol. XIV.

NOV. 1, 1886.

No. 21.

TERMS: \$1.00 PER ANNUM, IN ADVANCE;
2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00;
10 or more, 75 cts. each. Single Number,
5 cts. Additions to clubs may be made
at club rates. Above are all to be sent
TO ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS
than 90 cts. each. Sent postpaid, in the
U. S. and Canada. To all other coun-
tries of the Universal Postal Union, 18c
per year extra. To all countries NOT of
the U. P. U., 42c per year extra.

NORTH-AMERICAN CONVENTION.

A Few "Pointers."

RENDERING BEESWAX.

MANY persons spoil wax by melting it in dirty iron kettles; also by overheating it, or, when using steam, by admitting the steam into direct contact with the wax. Wax may be rendered in an ordinary boiler upon a stove, by using plenty of water. A sack of wire cloth sunk in the boiler will enable any one to dip the melted wax from the inside of the sack in a tolerably fair state of purity. The solar wax-extractor is destined to take the place of other wax-extractors. There is no expense for fuel, the wax is of superior quality, and the honey in cappings is saved. A small solar wax-extractor is preferable to a large one. It should be of such size that the wax placed in it will all melt in a day. The dish containing the melted wax that has run from the extractor ought to stand in the sun, in order that the wax may remain in a melted state, allowing the impurities to settle. The heat of the sun is never sufficient to injure the wax, but the honey has a flavor of pollen.

SEPARATORS.

Mr. N. N. Betsinger, of New York, has, for four years, been using wire cloth for separators. The mesh is four to the inch, and the cloth is dipped in molten metal, which fixes the wires solidly in their places. The bees can pass very freely, while the wire acts perfectly as a separator. Mr. B. uses a case for holding the sections in such a position that the separators remain a bee-space from the sides of the sections. Mr. Betsinger has patented his invention.

FOUL BROOD.

This subject was quite largely discussed. Good evidence was introduced, showing that the disease may be spread by means of honey. It was also thought that many people did not correctly interpret the published descriptions of foul brood. The descriptions given are applicable to the advanced stages of the disease; but when it first starts, only a few diseased cells will be seen, and there will be no noticeable odor unless the nose is brought near the foul brood. When a larva is diseased, its color changes to that of coffee with milk in it, and it will stretch out (if a pin be thrust into it and an attempt made to remove the larva) to the length of an inch. It finally assumes a darker hue, shrinks and dries up, and remains upon the lower side of the cell, where it resembles a speck of tar. Several had cured foul brood by the starvation plan.

HONEY-PLANTS.

The advice at present is to raise such plants for honey as will yield something besides honey. For this purpose, alsike clover stands at the head; next comes buckwheat, then rape and raspberries. The most promising plants to raise for honey alone are sweet clover, figwort, spider plant, and the so-called Chapman honey-plant. The latter is a biennial, resembling a thistle. The seed is sown in the spring, and, after the plant is fully established, it requires no further attention. It yields honey in very large quantities, has a fibrous stalk that some one thought might be utilized in making straw paper, and 2½ lbs. of ground seed has furnished 9 ounces of fine clear oil.

DRONES AND DRONE-COMB.

Drones serve no purpose except the fecundation of queens, and bees build drone-comb only when

they wish to rear drones for the fertilization of queens, or are building combs for storing honey during a good honey-flow. The majority of those who had tried hiving swarms upon empty frames did not favor the practice; they did not secure so much honey, but *did* secure too much drone-comb. A few had succeeded to their entire satisfaction. Rogersville, Mich. W. Z. HUTCHINSON, Sec.

QUEENS' VOICES.

CALLING IN THE CELLS.

IN Oct. 1st No., page 778, E. S. Miner takes issue with me in regard to queens calling while in the cell. Prof. A. J. Cook said, some years ago, that, when the first young queen hatches, if the *bees* intend to send out a second swarm we hear this peculiar note of the queen, and she is *answered by the other queens still in the cells* (italics mine).

I have heard them calling when I knew there was no queen in the hive outside of a cell, and when the cell-cap was not cut loose so the queen could push her head out, as suggested by Bro. Root. I cut a queen-cell out of a hive where five or six were calling, and heard the young queen call in the cell while I held it on my knife, and the cap was not cut partly off. I laid the cell down to take out some frames, and in about five minutes she came out. I cut out all but one cell, and at night the queen had quit calling, but still the bees swarmed next day, leaving the old colony queenless. I used the cells and queen that hatched, to form nuclei. I ask Bro. Root to say whether young queens ever call in the queen-nursery. I never used one. Why does the first young queen begin to call before leaving the cell, *only* when the bees intend to swarm, if not because she is kept in by the bees? When one calls, the others answer. At other times the oldest queen hatches, and the other cells are destroyed without any quarreling among the queens.

I ask Bro. Miner to examine carefully a cricket, grasshopper, or other insect that makes a similar noise, and he will find it is made by the covering of the wings, provided with a special apparatus for that purpose. And no insect that I know of makes a similar sound with the true wings, or without this special provision. The worker-bees make several variations of a buzzing, or humming sound, with their wings; but it is very different from this piping of the queen. There is no way of proving positively that the queens do this calling, because kept in by the bees; but it is a fair inference, when at such times the queen will stay in the cell until old enough to fly, unless taken out of the hive, when she will come out at once, and at other times come out without calling, looking like a worker just hatched, and unable to fly. This is my conclusion after three years' investigation to find the cause. 9—JOHN C. GILLILAND, 15—25.

Bloomfield, Ind., Oct., 1886.

Friend G., I can not remember that I ever heard a queen call while in a cell in the nursery. I am glad you suggest the matter, for I do not remember to have ever thought of it before. I should like to hear from friend Hayhurst and others who have used the nursery a good many years.

CALIFORNIA.

BEES IN AN OLD DUNGEON.

YOU may remember me as a former resident of El Dara, Ill., and, while there, a bee-keeper. I came to this country a year ago this fall, partly for health, and also to escape the hard winters. I find it a delightful change, and an improvement in both health and climate. I intended to go into the bee-business here, but instead I have been buying and selling. This is the most wonderful country for bees I ever saw. They never winter-kill; spring dwindling is unknown. Bees work the year round. Honey is very cheap. I got the finest extracted I ever saw, almost transparent, and of good body, for 3 cts. per lb., and retailed it for five; beautiful comb honey in 2-lb. sections, at 6 cts. per lb., and sold it for 8 and 10 cts. My zeal for handling bees has rather oozed out since finding honey so low and abundant.

Wild bees can be found among the rocks and in caves in the canyons here, some having been there for years, with immense quantities of honey. And, by the way, I want to mention one little fact that is wonderful. I went out with a party the other day to the old Jesuit Mission, about 4 miles from here. It's an old adobe and brick structure, over 100 years old. The main building, bull-pens, arches, and wings, cover several acres, or did. Much is in ruin now. Well, in one wing, running out from the main building, there has evidently been a dungeon; but above this room there seems to be space for another room, though I could find no entrance, nor any sign of there ever having been; but there are three different sides where bees are passing out and in; two entrances are very strong. The air seemed to be full of bees, and they keep up such a roaring you can hear them for rods away. In looking over this old pile, viewing its rude but grand architecture, its ornamental work, images, etc., now fast crumbling away, I was filled with wonder and delight; but when I came to the department of bees I was moved within me as *never* before. There must be within that wall quite a large room. The guide tells of their having bees there for 20 years.

Now, Bro. Root, come out and visit this wonderful State. We will go up to the old Mission, get permission from the authorities, dig a hole into that wall, and just take out that honey, bees and all. You can load a car and take it right home.

GLEANINGS comes, a welcome visitor. I like to keep watch of the progress made by our old friends in managing bees. Extracted honey here is put up in square tin cans holding 5 gallons each, and two cans in a case, the two just sliding in nicely; then they are nailed up.

The weather here by the coast is wonderfully cool—mercury standing at about 80, sometimes dropping to 70.

Oceanside, Cal.

T. C. BUNKER.

Well done, old friend; but why don't you dig a hole into that unexplored room, without waiting for me to come and help? I think my brother at San Diego will be the man for the undertaking. He is always ready for adventures. But I can not understand how it is possible that this room should have remained all these years without being explored. It seems to me something like the age of the world when people lived so

many centuries on one side of a vast ocean, without enterprise enough to get across and see what was on the other side. No disrespect intended to you, friend B.

SELLING THINGS BY WEIGHT INSTEAD OF BY THE BUSHEL.

W. J. Green, of the Experimental College (Columbus, O.), Gives us some Valuable Facts in the Matter.

ALSO SOMETHING ABOUT RAISING STRAWBERRIES IN THE FALL.

NEARLY all vegetables and fruits vary greatly in weight at different times of the year. The size of individual specimens that make up a given bulk affects the weight considerably. There is also much more difference in varieties than is commonly supposed. A bushel of "Peck's Pleasant" apples weighs about 55 lbs.; but the same bulk of some sorts weighs not more than 45 lbs. Peerless potatoes weigh more than most other sorts. White onions are usually not so heavy as red or yellow.

I give you below the legal weight per bushel of vegetables, fruits, etc.

Irish potatoes, -	60 lbs.	Onions, -	50 lbs.
Sweet " "	50 "	Tomatoes, 56 "	
Beans, shelled, 60 "		Turnips, 60 "	
Peas, 60 "		Apples, 48 "	
Dried apples, 22 "		Peaches, 48 "	
" peaches, 33 "			

A bushel, as applied to fruits and vegetables, is a very indefinite quantity, and ought to be abandoned as a standard. There is no possibility of settling upon a given bulk or weight for a bushel that will be satisfactory and fair at all times. If we agree upon the weight of a bushel, and establish it by law, as has been done, then there will be a variation of from 5 to 20 per cent in the cubic contents. If the other course were taken, and we agree upon the cubic contents of a bushel, then there will be the same variation in the weight.

The best thing that our legislators could do for us in this matter would be to repeal the law, and thus leave us without a legal bushel for fruits and vegetables. We should then take the only course left, and sell by weight. This would do away with "false bottoms" and many other easy ways of cheating. If it did not make people honest, it would at least make dishonesty more difficult. The only class that are now benefited by the legalized bushel are the dealers. They buy by weight when they find it to their advantage to do so, and it often is, but to the great disadvantage of the grower. These same dealers retail, not by weight, but by measure, which often gives them a fine profit, even at the same price per bushel at which they buy. The consumer might, of course, demand a legal bushel, but he seldom does so. In cities, a large share of the fruits and vegetables are sold by hucksters, and nothing better for their purpose could possibly be invented than the bushel measure and its fractional parts. They can make a bushel and a half out of 60 lbs. of potatoes, without the least difficulty, and with little fear of detection.

STRAWBERRIES IN THE FALL.

The strawberries that you saw in Indianapolis were probably grown near that city, although they might have come from New York, or, more likely,

from Tennessee or some other part of the South, where it is not uncommon to grow a second crop. We have here at Columbus a small second crop almost every year, of some varieties. Occasionally the product is sufficient to pay for picking and marketing; at least, such a thing has been done near here. The Cumberland Triumph is the variety for the purpose, as it is almost the only one that gives us any quantity of fruit in the fall. The essential condition to produce a second crop is, that the plants shall have almost a complete rest after fruiting, for a month or more, and then be brought into vigorous growth. When a drought occurs during July or August, succeeded by a warm wet September, we may expect plenty of Cumberlants in September or October.

If you do not wish to trust to nature to give you a second crop you may get one in a small way by artificial means. If you should force any strawberry-plants in the greenhouse for early berries you can use those same plants for a fall crop by simply keeping them dry for a few weeks during the summer, and then force them into growth again. Doubtless other ways might be devised to accomplish the same ends, but I will trust you, Mr. Root, to find out ways and means, if you *want the berries*.

Columbus, O.

W. J. GREEN.

Friend G., I am very much obliged indeed for the facts furnished. I notice that the matter has been pondered by wiser and more experienced heads than my own; but I do think we should do every thing in our power to have our weights and measures so they will discourage attempts at fraud. I hope it is not true that all hucksters are as unprincipled as you mention, but I very well know that many of them are. It seems to me the adoption of weights, instead of bushels, will be a very great advance, and I do wish it were possible to adopt the decimal system of weights and measures, when we once get about it. When I adopted the plan of selling celery by the pound, I supposed we had got at something definite, so as to make it fair for all parties; but during a drought our White Plume became so destitute of sap that it took a great deal more in bulk to make a pound than it did of the Golden Dwarf and some other varieties. I also found that dipping it in water not only improved its appearance when it was a little inclined to wilt, but that the adhering water added much to its weight. In fact, we told a purchaser who had bought quite a lot, we would cheerfully wash it all for him for nothing if he preferred. He caught at the idea at once, and said he preferred the "unwashed." This same thing holds true of lettuce and a great many other things. I do not see any real substantial remedy except the golden rule.—I know there are occasionally a few berries in the fall, but those that I saw at Indianapolis were extremely large; in fact, they were larger than berries often seen on the market in regular strawberry time. Had it not been for their great size they would hardly have sold at 50 cents a quart, when fine peaches and other fruits could be had at moderate prices. One thing that struck me in their appearance was their light color. They were large, and of pretty fair shape, but very light colored for strawberries.

ARTIFICIAL PASTURAGE.

SCATTERING SEED BY THE WAYSIDE.

I WAS very deeply interested in the bee-pasturage question of Mrs. Chaddock's, especially alsike clover, in GLEANINGS for Oct. 15th, and I had decided to give my views upon the questions taken up in her article (not the latter part, of course). The question of bee-pasturage may be taken up in a practical and an impractical manner; and it is perhaps oftener the latter than the former. I will give my views, based largely upon practical experience and observation, and a little on theory.

It will not pay to cultivate plants for honey alone—that is, to take land fit for cultivation and sow or plant it with honey-producing plants which are of no other value. But if we can cultivate plants, etc., the flowers of which will produce honey, and at the same time you can secure from them an otherwise fairly remunerative crop, then you are all right. Or if you can scatter honey-plant seeds in places where they do not take up space which otherwise would be under cultivation, I consider such an investment remunerative. We should always, however, be very careful as to what we sow, that it be not a plant which will become a noxious weed. For instance, I could never permit myself to scatter one seed of "Viper's bugloss" (*Echium vulgare*); it is a pest in some parts of Ontario, where a few years ago it was almost unknown, and still a growing one, and no conscientious or right thinking man should scatter another seed of it until he finds out what its nature is. As to the Chapman honey-plant, I have seen it in bloom, have questioned closely Mr. Goldie, of Guelph, who had 50 plants on his grounds to experiment with, and who is an able botanist. Mr. Goldie stated that the plant is a biennial, does not increase from the root, is extremely hardy (*extremely hardy*, mark you), and, in his estimation, might easily prove to be a noxious weed. Now, are we justified in assisting to spread a plant broadcast over America which may prove to be another pest to those who cultivate the soil? If we assist and countenance actions which at least are a risk to our neighbors, have we a right to expect the fellowship and good feeling of such from a natural standpoint? No. We are a help and a profit to the horticulturist and agriculturist; do not let us run the risk of more than counterbalancing the benefit we confer.

Then we can profitably strive to have our neighbors, citizens, etc., plant such trees as we know are productive of honey. Much can be done in this direction, at a very small outlay. The linden, soft and hard maple, and, in places, willow, are excellent and beautiful shade-trees. And then we must be guarded in not overestimating the benefits derived from a flower. We stroll about after linden-bloom, and possibly near frost, and see bees working constantly upon sweet clover; are their frequent and continuous visits an indication of the quantity of honey obtained? By no means; it may simply be, and, I believe, frequently is, only an indication that there is a little honey there. There are no other honey-producing flowers about, and the bee, unlike some individuals when out of work, thinks half a loaf—yes, far less—is better than no loaf at all. Of course, a careful, observing, and experienced bee-keeper can readily see if such be the case or not.

Next, as to clover, and Mrs. Chaddock's argument,

that alsike clover would not pay, as there is more honey in white than the bees can gather, I find that bees never touch the white after the alsike is in bloom. They commence blooming within a few days of one another. Bees will, in fact, leave white in the more immediate vicinity, and take alsike. As a honey-plant, my observations of five years prove to me that, during that time, it has not failed to secrete nectar which is slightly superior to the average white-clover honey. We all know white does fail. As to a remunerative hay and seed crop for the farm, it is decidedly that, and very much on the increase through our part and the most of Ontario. You, as a bee-keeper, can make no mistake by encouraging its cultivation, praising it, and giving away seed, to induce its cultivation. As a farmer, you can make no mistake if the soil is at all adapted to it—an inclination to a low soil, or, at least, not high, and not too light. As to buckwheat, it fails here at times. I do not think it would pay to cultivate it apart from its utility in plowing under for a crop of wheat. R. F. HOLTERMANN.

Brantford, Canada.

Friend H., there are extremes in both ways in this matter of troublesome weeds. Even buckwheat is an extremely troublesome weed if the seed is allowed to scatter itself; and it will come up year after year where a crop has been raised, and the seed allowed to shell. Friend Chapman is an experienced market-gardener, and knows all about weeds, about as well as any of us, and I think we can safely abide by his statements.

PERFORATED ZINC.

THE SIZE OF OUR PERFORATIONS JUST RIGHT; NO QUEEN CAN GET THROUGH.

I AM getting well started in the hive and queen-bee trade, and am doing better than I had reason to expect. My hive takes well, though some find fault with it. I am transferring and Italianizing every day. Your perforated zinc is exactly right. I would not have it changed a fraction. I believe it will hold the smallest queen, as I have daily trials of it in my swarming-box. I spend no time hunting queens. I rush all into the swarming-box, then draw the slide over the perforated side, and Bingham's "Doctor" soon empties the box of all except the queen and drones.

Someone said, in your journal, "Leave the old queen in till the new queen is ready to liberate." I tried it, at a loss of two queens—the first I ever lost in my life in introducing. Now I fall on the old way, and take out one when I put in the other.

Sealy, Texas, Oct. 19, 1886.

J. L. DEWEY.

The results of your experiments with our make of zinc confirm exactly the results we arrived at as recorded on page 424, May 15th issue. We were very particular to have our machinist make the dies of just such a size as are the perforations of the zinc we send out. In the new edition of the A B C book now in preparation, we have carefully considered the proper size of perforation to be both drone and queen excluding, and yet permit the easy passage of workers. Your method of finding the queen by means of the zinc is good, and I should think it would answer an excellent purpose when it is de-

sired to get a black queen out of a colony. We like the Peet process of introducing queens. By it we can take out one queen from a colony, and replace her by another at the same operation. The Peet process very rarely fails with us when the cage is properly fastened to the comb; and Neighbor H. says he can not remember that it ever failed with him.

PACKING BEES IN LONG BOXES FOR WINTER.

FEEDING, ETC.

MY father purchased a swarm of bees about five years ago, and three years later he gave me a swarm. We sell no bees, but keep them for their honey. We generally winter from 15 to 20. Some winters are unfavorable for bees—the winter of 1884, for example. Last winter we did not lose a single swarm. I will give you a brief description of the way I manage mine in winter. When cold weather sets in for earnest, I take the bees from their summer stands and place them in long boxes which will hold about five swarms each, placing the hives far enough apart in the boxes to pack dry straw and chaff around them, constructing a passage by means of two cleats nailed to a board, and placed at the mouth of the hive. This allows the bees to pass back and forth whenever the weather is suitable, and you think best. I always select a dry place, and have the boxes at least 30 inches from the ground. If it is where winter is severe, it is well to place a few cornstalks about them, as this protects them from piercing winds and frost. To make sure that they have enough honey, I lay two or three small sticks across the brood-frames, and place a card of honey upon them. This allows them to pass over the frames; and if they are short of honey they will have this card to fall back on. If there happen to be a bright sunshiny day during winter, it is well to let them take a fly; and then is a good time to see if they have honey enough to last them till spring. By the way, I generally change the cloth which is in the surplus-chamber, and give them a dry one, as the other will be frozen if there is any moisture to freeze. They are always damp or musty, and it is a good plan to give them an airing. If I don't have honey to feed them I make a thick syrup and turn it into some empty comb and place it over, just the same as I would the honey. When spring comes I place the hives back on their summer stands, and give them a clean bottom-board, as this saves the bees from carrying out the dead bees.

When it is time for them to begin hatching brood I give them some salt and water to work on, and also some stimulative substance, such as rye flour and oatmeal. I hardly ever make an artificial swarm. I always let them swarm naturally. If I want them to make honey instead of swarming, I look them over and kill all the queens but one; also give them more room to work in.

We use sections placed in a crate on top of the hive. This crate holds 24 1-lb. sections. A good strong swarm of bees will fill from two to three of these crates during the summer. Some do even better than that, but the average swarm fills about two.

ARTHUR W. JEWETT.

Mason, Mich.

KITES.

A LITTLE TALK TO THE JUVENILES.

WH O has not enjoyed the sport of flying a kite? Did you never have a string broken, or have the kite come down in a tree-top, or across some building?

Did you never get tired out in trying to make a kite fly, when there was not wind enough? and then some other day, don't you remember that the wind blew too hard and broke the string, or made the kite dive, in spite of various nondescript articles tied to its tail? Well, I have for many years wondered why somebody did not start to making kites by machinery—kites made of such carefully selected, light, strong, straight-grained wood that they would fly, almost without any wind. Sometimes I have threatened to start a kite-factory myself, but I never got around to it.

Only a few days ago some of the clerks said there was a man hunting for me, who had a patent kite. I found him, and we soon made a trade. They used to sell their patent kites for 25 cents; but when I spoke about buying a thousand, he got so excited about it he could not talk straight; but I bought the thousand kites, and paid him the money; and instead of selling them for 25 cents, I am going to sell them for an even 10 cents. May be you would like to see what they are like. Well, over the leaf is a picture of the institution, tail and all.

This kite is made portable. The sticks that compose it can be folded up just as you would fold up a fan, and then they can be straightened out again. The paper is gummed around the edges, like an envelope, so all you have to do is to spread out the sticks, lick the edges of the paper, and paste it up, then hitch on the tail and string, according to the printed instructions, and there you are, all ready to fly it.

Yesterday there was a pretty good breeze, and so Huber and I started out to try one of the new kites. It shot right up out of my hands, and Huber just laughed and danced, and bubbled over with enjoyment while I let out the string, so it could go away up high. He said it was surely going to run against the clouds. But what do you think it did do? Why, I was getting ready to let him hold it, and was giving him a great amount of caution about not letting the string slip through his fingers; and to make doubly sure, I told him I would tie it around his waist. He said he would not let it go, but I thought I would not trust him. Now, then, what do you suppose papa did? Why, he let it slip through his fingers; and instead of running against the clouds, it just toppled over and sailed away over across the railroad track, and the string got tangled in an engine. Well, papa got the kite down from off the building, untangled the string and straightened it out, and spent more than ten cents' worth of time in getting every thing all right. But I thought it was better to teach Huber to take care of property, even if it did sometimes take more time than it was worth, than to teach him another lesson by going into the counter store and getting a new one. Well, we took the string over to

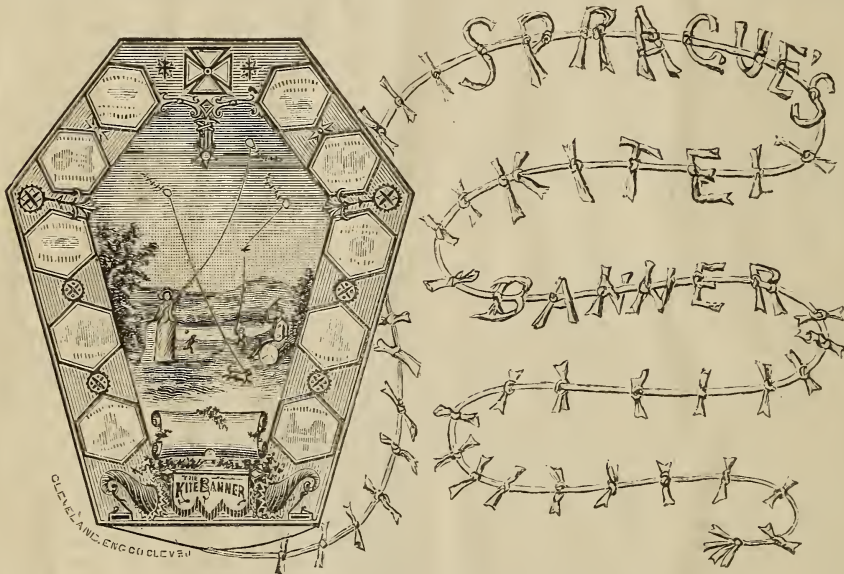
Uncle Hen's and let Aunt Mate and Gladis Maud (she is the six-months-old baby that has come to live with Uncle Hen's folks) see the kite. Then we took it over and showed it to mamma, and sent messengers up on the string. The messenger was just a little piece of paper with a hole through it. The end of the string is put through the hole, and the wind spins the paper clear up to the kite. Then we tied the kite-string to Huber's cart, and, sure enough, off started the cart as if it were alive, and trundled away just about as fast as Huber could run, like a thing of life. When the wind veered around, the cart would run off to one side of the road, and run into the ditch, and upset; and then you should have heard him laugh and "holler" as he pulled it out. He got so excited with the fun he was having that I began to think he had better put the kite away until some other day, and then a team came along and was going to run over the

whenever the kite seems to be getting too low. If that does not bring it up, pull your wagon backward until it comes up to a good height again. Now it will draw the wagon a good way before it gets down.

If the wind is strong and steady, however, the kite will pull a cart or wagon at a pretty good speed, and not come down at all. The worst trouble about it is, if you want your wagon to run on a traveled road the changing of the wind will pull it from one side to another. Perhaps a steering apparatus, such as they have on traction-engines, might fix this all right.

While we were having our fun with it, a man stopped and inquired how long before I was going to have a kite hitched to our market-wagon, so as to dispense with horses.

Well, we can send you a kite, all complete, in a pasteboard tube, for just 10 cts.; and if you want it by mail you will need to



OUR TEN-CENT KITE FOR THE JUVENILES.

string, and then he was in about as much trouble as a child often gets into. Why, he cried as if that kite-string were worth a hundred dollars, when a whole ball of it costs only five cents at the counter store. I wonder if older people don't sometimes make a greater fuss about the loss of a small amount of property. Well, before that naughty team had run against the kite and pulled it down, mamma came and showed him that, by going backward, he could raise the string out of their way. Is not this another lesson to poor shortsighted, worrying humanity? Mamma wound the string up on a piece of stick, and the kite came down careening and nodding, and cutting up all sorts of antics, as if it were a playful kitten instead of a few bits of inanimate wood and paper and string.

Now, whenever you want to make the kite draw a cart, remember to stop the cart

send 5 cts. more for postage. We can send them by freight or express, with other goods, for 10 cts. And this reminds me, that three more numbers of GLEANINGS will finish the year 1886. As is customary, we will send it the remainder of the year free to all those who remit now for 1887. And as we don't want to show any favors to new subscribers that we do not to old ones, we will send a kite to every old subscriber who sends us \$1.00 for GLEANINGS for 1887, before Dec. 1, always remembering that, if you want a kite by mail, you must be sure to include 5 cts. to pay the postage. If new subscribers want a kite, they can get it by sending us one more subscription instead of their own. We can furnish the kites at wholesale, 25 in a box, including one sample, all finished and trimmed, ready for flight, for 8 cts. each, or an even \$2.00 for the whole box and all,

REPORT FROM O. M. BLANTON.

From 425 to 475, and 31,000 Lbs. of Honey.

HIS OPINIONS ON SOME OF THE NEW DEVELOPMENTS.

THE honey season just closed has never, since I have been in the business, been more discouraging. My entire crop is unsold, and, with the prospect of having to put it on the market at 3 to 3½ cents per pound, leads me to wish I had never engaged in bee-keeping on a large scale. I shall try it one more year before I determine to abandon my favorite pursuit.

The season just past has been by no means the best. With a very wet cold spring which retarded the secretion of nectar, and, in addition, a severe drought in the month of May, extending into the middle of June, caused but a moderate yield. July and August were far better, and from late corn and cow-peas the bees recovered much of their lost ground.

I closed my apiaries on the 5th of September, determined to leave my bees an abundance of winter stores, knowing that, as it was of but little value to me, it would be of great benefit to them. I commenced the season with 425 colonies, spring count, and closed with 475. My yield was 60 barrels, or about 31,000 pounds, of extracted honey, and 600 pounds of comb. This is about as poor a yield as I have had since being engaged in bee-keeping. I must admit, that if I could have been able to give my personal supervision to my apiaries, the yield would have been greater; but circumstances beyond my control prevented.

I have read, in the different journals, many causes for the low price of honey. There are three, beyond a doubt: Overproduction, general depression of trade, and adulteration. The two first, in time, will rectify themselves; but the great evil in the last-named cause will always, in my opinion, be a bar to the prosperity of the bee-keeper. The low price of glucose, and the new discovery of saccharine, will stretch "imitation honey" to an indefinite extent.

I have been engaged in bee-keeping for fourteen years, and look back with surprise at the many trials and losses I have sustained in my experiments with varieties of hives and apparatus. How few I now use! The Langstroth hive (although not the only good one) I adopt, and most of them of 20 frames and one story. I find them more convenient and rapid of manipulation, which is of great consideration when working for extracted honey. I never use more than one inch in width of comb foundation as a guide for the bees on the top-bars of the Langstroth frames, or the one and two pound sections. I have abandoned full sheets of foundation with wire. Honey-boards, bee-feeders, queen and drone excluders, I find of no practical benefit. As for moth-traps, I am astonished that any sensible bee-keeper would use them. Reversible hives and frames, I will leave others to thoroughly test their value before I use them.

A wax-extractor I would not have; for with the old process of melting in boiling water, especially when two or three pure rain waters are used, there will be very few impurities left; and more so, if the fire is removed from the vessel containing the melted wax and allowed to cool *extremely slow in the water* in which it is melted. The impurities should

be scraped from the bottom of the cold wax before being melted again in another pure water. Many things that I have discarded may be of value to other bee-keepers in their localities.

As for packages, I find of value for me, for the home market, one and two pound sections of comb honey; and for extracted, one and two pound glass jars and one-gallon tin cans.

For shipment, I have, after many experiments, found that cypress barrels, fresh from the cooper, and made to order, containing from 525 to 550 pounds net, and with 16 hoops, are only to be relied on. These are my convictions, after so many years of experience.

I hope a silver lining may yet appear on the clouds now threatening our future prosperity, and that we may be encouraged to continue in one of the most agreeable and healthful occupations for the lover of country pursuits. O. M. BLANTON.

Greenville, Miss., Oct. 12, 1886.

Friend B., I am sorry to see you getting "blue" over the prospect. I supposed the low price of honey had about put an end to adulteration. You speak of honey being 3 to 3½ cts. per lb.; but glucose is quoted in New York at 4½. Now, they might adulterate the glucose with honey, but they could not adulterate the honey with glucose, at the above prices. If you sell your honey, even as low as 5 cts. per lb., is it not at this price going to compete with cane sugar? Friend Dadant said, at the convention, that he was not frightened at the prospect of only 5 cts. per lb. for his honey in quantities. It is, indeed, true, that where one numbers his colonies by the hundreds, he soon feels obliged to dispense with many of the fixtures which the bee-keeper of a dozen colonies thinks a necessity. We do not want you to desert our ranks yet a while.

BEES AND GRAPES.

A REMEDY SUGGESTED THAT IS AT LEAST SOMETIMES PRACTICABLE.

IN your editorial notes on page 798 you mention the wonder of visitors that the bees do not eat your grapes. I have about thirty bearing vines in my apiary, and visitors often ask me the same question: "How is it that the bees do not eat the grapes?"

Some even suppose that the grapes are raised for food for the bees. They are apt to look surprised, perhaps a little incredulous, when I tell them that I have never yet seen a bee eating a grape, though this is perfectly true. The reason for this is, no doubt, that there is almost always honey to be gathered here at the time when grapes are ripe. Bees care nothing for grape-juice when they can get honey. The chickens often eat our grapes, and bruise and mangle them so that the bees are not hindered from sucking the juice if they felt so inclined; but here they never have the inclination. No doubt, though, there are places where bees attack and at least partially destroy grapes that have been injured by birds or other insects, or that have cracked on the vines from overripeness or other causes.

It is superfluous to tell a person who has investigated the subject carefully, that bees can not injure sound fruit; but it is useless to deny that bees

can and do injure grapes or other fruit, the outer skin of which has been broken in any way. Is it not best for us to meet this fact squarely and honestly? Should we meet damaging truth, or even mistaken prejudice and misrepresentation, with subterfuge and evasion? Is it not our wisest and safest course to recognize the fact that bees may and do cause pecuniary loss to fruit-raisers? Let us admit all that is true, and then do all we can to remedy the evil.

Your position in regard to screens for cider-mills is well known. A little trouble and expense will prevent a great deal of trouble, loss, and bad feeling. Let us see how far we can apply this principle to the protection of fruit from bees.

As I said before, the chickens eat my grapes. To prevent this I have been obliged to protect them in a way I am surprised never to have seen mentioned in the bee-journals. This plan is to place a paper sack over each bunch of grapes. Those to whom the plan is new, may laugh at it; but it is nothing new to grape-raisers. Many, who raise grapes by the ton, sack all of their grapes and find it profitable to do so. The advantages are, that the sacks protect the grapes from birds and insects, prevent mildew and rot, produce firmer bunches, which can be picked and handled without breaking off the grapes or destroying the bloom, and also protect the grapes from frost.

The method of using is to pin a one or two pound paper sack over each bunch, pinning the mouth closely around the stem with a cheap pin or wire nail. I have never seen the last recommended, but I find that a $\frac{3}{4}$ -inch wire nail is just as good as a pin, and cheaper. The sacks used are the ordinary manilla sacks, and cost about 80 cents per 1000. Before using, the bottom should be perforated, else the sack will catch and hold water. Sacks are now manufactured expressly for this purpose, and may prove to be cheaper and better adapted. The best time to put sacks on is when the grapes are small, say the size of No. 6 shot. It can readily be seen, that if grape-raisers would sack their grapes a large part of the trouble connected with "bees vs. grapes" would be avoided. I think that, in a majority of cases, the vineyardist would readily adopt this plan if it were properly brought to his notice, and he could be induced to try it once. In some cases the bee-keeper could better afford to furnish the sacks free than to have his bees destroy his neighbors' grapes.

While we should always be ready to protect our rights when assailed, we should remember that others have rights too, and "as much as lieth in us, live peaceably with all men."

Perhaps this is a little out of season; but coming to him who has had trouble with his bees destroying fruit, it will be more apt to prove impressive than at the time for putting it in action.

Dayton, Ill., Oct. 12, 1886.

J. A. GREEN.

Friend G., we are very much obliged indeed for the suggestions you give us. I was aware that many growers of choice grapes have been for some time in the habit of bagging them, but it did not occur to me before that it forms a perfect and complete remedy for the trouble between bee-keepers and grape-growers. The only difficulty is the expense, and trouble of putting on the bags. The way our grapes grow—tied to a stake, a good many of the bunches are so

intertwined with the leaves and twigs it will be difficult to get a bag over them at all. Perhaps the usual system of training on horizontal wires would allow a bunch to hang down so as to make it much more feasible.

I should be very glad indeed to get the address of the manufacturers of bags for bagging grapes.—In regard to wire nails being cheaper than common pins, I think we have a kind of pins on our three-cent counter that is even cheaper than wire nails. There are, on a three-cent paper, 280 pins. I think this is a matter of very great moment indeed, and it behooves us to do all in our power toward encouraging grape-growers to use bags. I have found out this season that the baskets of grapes go quicker when the bunch is entire and the bloom on the grape is perfect; but I find it pretty difficult to pick grapes rapidly and not break and tear the berries. From what you say, I am quite satisfied we should make money to have our grapes all grown in bags, unless, indeed, we except a few bunches not worth bagging, or some that are twined in the branches so a bag will not easily go over them.

BALLING QUEENS.

WHY DO BEES BALL QUEENS THAT HAVE BEEN SUCCESSFULLY INTRODUCED?

ON page 784, Oct. 1, 1886, Mr. John H. Mullin asks for information on the question of bees balling queens, and says it is not queens that are being introduced. Your answer applies only to queens which the bees have not accepted. You say, "Bees ball queens for the simple reason that they do not wish to accept them, and by that means they propose to sting or smother them to death." This answer fails to meet the question, as I understand it. His question refers to queens that are fully accepted—those that may have been bred in the colony (balling them) and laying for one or twelve months. In the past four years I have lost some of my most valuable breeding queens, just in the same way that he mentions—their own workers balling them, and in some instances stinging them to death. They do not always smother queens to death; for when very angry they often sting the queen to death. I have seen a bee, among the first to attack a queen, pop his sting into her abdomen under the segment band, and kill her almost instantly, after which they would ball her for a time.

Among the number of queens that I have lost in the way that Mr. Mullin states, were queens that had been bred and laying for one year and more; in some instances, in the same colony in which they were balled and killed. I have even had them killed the past season in three L. frame nuclei, after laying for 10 or 12 days, by simply opening the hive when honey was coming in very slowly. It is to this cause I have always attributed the balling of queens by their own bees. They are more apt to do it in early spring or midsummer, when a dearth of honey happens, if disturbed by being opened up and smoked, than they are in the fall. I have never had it occur with me in fall or winter, and I have repeatedly opened my colonies and taken out frames of bees when they were clustered, and could not fly off the combs. You do not do that up north, friend

Root, do you? The only remedy for the evil I have found is not to open hives except when bees are gathering honey; for in a honey dearth, any bees are likely to ball and kill their queens, if disturbed much at such times, unless in fall or winter, and then they are not apt to do it.

QUEENS REARED UNDER THE SWARMING IMPULSE
—ARE THEY PREFERABLE?

Such is the heading of Mr. J. Eastburn's letter, page 786, Oct. 1, 1886. If I wanted more increase by *natural* swarming out, from queens which are not any more prolific than others which are not bred under the swarming impulse, I would take those that are bred under the swarming impulse; but for work, and best qualities combined, I always choose queens bred after the natural swarming impulse of bees has passed off. My experience has been, that the latter class of queens are fully as prolific, though less inclined to swarm, than those bred under the swarming impulse.

I have queens in my apiaries to-day that are three years old, and never offered to lead out, or swarm during that time. They were bred under the non-swarming impulse. If we desire bees that won't swarm, we must get them by breeding queens out of the swarming season, and contriving to select the most non-swarming of these to breed our drones and queens from. I will define, in part, what I consider the term "swarming impulse" implies; or, rather, the sense in which I apply it. That is the season of the year and the time when bees are swarming naturally, by Nature's own impulses, when they mostly all have the swarming fever in-bred. Cells built at that time, and by such bees, are built under the *natural* "swarming impulse." Those built out of that season, either with or without stimulative feeding (to get them built perfectly, *well fed*, and as near the quality of those built under Nature's own impulse and desires), are built and bred on the non-swarming impulse. Queens from such cells as are built where stimulative feeding is followed, till cells are completed, out of swarming season, are such as I always select. But be it remembered, I have them built in full colonies and from freshly laid eggs. When honey is coming in plentifully from natural sources, stimulative feeding to get cells built is not desirable.

4—ABBOT L. SWINSON, 66—74.

Goldsboro, N. C., Oct. 14, 1886.

Thanks, friend S., for your correction. Since you speak of it, I see that the "foot-note" does not cover the whole question asked by friend M. I have noticed that queens have been balled even after they have been in the hive for a year or so. Opening a hive during a dearth of honey, or just after a honey-flow, sometimes causes the bees to ball their queen, as you say. Bees are also apt to ball their queen a day or so after she has been successfully introduced, when a novice has a curiosity to look in and "see if she is all right." This is one reason why we use and prefer the Peet cage. It is so constructed that the queen can be liberated by the bees without the usual disturbance, noise, and jar. That is, every thing progresses naturally.

The balling of queens is sometimes caused by placing the hives too near together, or by having them too nearly of the same appearance. In that case, enough bees will get into the wrong colony to pitch into the

queen because she is a strange one to them. I think a great many losses have occurred in this way because the hives were exactly alike, and closer to each other than they ought to have been.

FLORIDA.

GLEANINGS ADAPTED TO ALL LATITUDES.

IT was three years ago to-day that I came to Florida. I like it, its climate suits me, and will suit any person who adapts his desires to it. This is the secret of making any location agreeable to you—content yourself. You can not bring Ohio, Indiana, or Kansas here. If you so desire, you had better stay where you are. I you have no object in coming to Florida but to make money, please stay where you are, for that is the best place for you; for if you are making money, and that is your chief desire, you will be worth more to Florida where you are; but if your health is delicate, and of a pulmonary nature, there is little doubt but that you might be benefited by the change, unless you are greatly prostrated. In that case, die among your friends; but never—no, never, break up your home and move to any country until you have first seen it, considered all of its advantages and disadvantages pertaining to you and your avocation, and studied well all you expected to gain by the change. If you do not do this you will almost certainly be disappointed, and will be an injury to the country you may chance to drift into. All I shall say in praise of Florida is, that there is a great future in store for it. Those who come here and adapt themselves to the country and its climate, and direct their energies in unison with the facilities of the country, will do well here. The man who has done well before coming to Florida will usually do so here. "Nothing succeeds so well as success."

GLEANINGS AND ITS CONTENTS.

GLEANINGS has been with me for three years here, and seven years in Indiana. It was a good guide while in my Indiana home. Its teachings were closely watched; for then all the theories of the "wintering problem," "spring dwindling," chaff hives, cellars, clamp, packings, Hill's device, and a thousand other things that were then applicable to my profession as a bee-keeper, are of but little interest now, more than to see the different troubles that follow bee-keeping. We have our troubles here as well, but not as yet so great as you have. We meet with no loss from wintering, if we use any care. Birds, mosquito-hawks, and ants, are our worst enemies. Robbing must be guarded against; and, as Ernest says, you must see to it yourself, for there is no great excellence without great labor.

The scientific and working principles of bee-keeping, as taught by the different authorities, are applicable to us in Florida as well as with you. This makes GLEANINGS very dear to us here. The Heads of Grain are closely winnowed, and much good seed has been garnered. The Tobacco Column has been chewed and smoked by the lovers of the weed, and many "smokers" changed hands.

The Reports Encouraging and Discouraging show the ups and downs of life as returned by the different members of your family of bee-keepers. Those discouraged, they bid "Hold the fort;" and

those who rejoice in their prosperity, they bid be charitable, and give as it is given unto you. "Notes and Queries," and your replies, have been closely scrutinized. Humbugs and Swindles have been exposed, and no reader of GLEANINGS need lose by them. Our Own Apiary has been closely watched, and from its management have been gathered many lessons of profit. "What to Do, and How to be Happy While Doing It," gives us in Florida more interesting reading than "How to Winter Our Bees" does. How to grow good vegetables is now to us a question of very great importance; for on that, to a great measure, depends the prosperity of Florida. Myself and My Neighbors—we are all neighbors, and I did hope that I could meet them at the convention this week in my native State, at Indianapolis, but I can not. This brings me to Our Homes. "God Bless Our Homes!" should be over every man's door, and should be engraved on every man's heart; but, alas! the "Blasted Hopes" that are in many blasted homes, caused by intemperance. May God so open the eyes of every praying Christian in this land, so that he may see to vote as he prays, that the cause of the curse may be removed from our land. "Woe unto them that are mighty to drink wine, and men of strength to mingle strong drink; which justify the wicked for a reward, and take away the righteousness of the righteous from him."—ISA. 5: 22, 23. JOHN CRAYCRAFT.

Altoona, Orange Co., Florida.

I am sure, friend C., we are very much obliged to you for your kind and encouraging words; and we can say amen most heartily to your closing text.

UPWARD HIVE VENTILATION.

CAN BEES WINTER IN HIVES ABSOLUTELY TIGHT ABOVE? ETC.

ALTHOUGH it has been stated so, yet I should be glad to know to a certainty whether a colony ever passed a confinement of 93 days on natural stores, and without a particle of upward ventilation to the hive, and came out undiseased. Less than a week ago I chanced to meet one of those cranks who always cling to nature's methods, and winters his bees with (supposed to be) tightly sealed brood-chambers. He said his method was the correct one, and that his success attested the truth. I began to feel elated at the prospects of learning something of this vexatious method of wintering. But, lo! it was found that his hives *did* have real upward ventilation, as, when they were inverted, water went out of them faster than it could be put in with a pint cup. Then and there his cherished old-fogy notion was shaken. It needs only a small amount of ventilation for a colony of bees. About such a circulation as would pass through 2 inches of loose chaff is sufficient in a temperature of 45°. If the temperature is above that point there should be less chaff, and a lower temperature would necessitate more chaff. A very few open cracks in a hive would provide that amount of ventilation, which would be likely to be a sufficiency. It seems to many, that a cluster of bees causes considerable warmth and circulation; but the fact is, in the case of a well-wintered colony, that there is as little draft as possible, and yet be worthy of the name of a draft.

One would be led to believe that a ¼-inch hole above the cluster would admit sufficient draft to carry off the overplus of moisture. The amount of moisture generated by a cluster of bees is inconsiderable, with the outside temperature at 45°, as the average temperature at the center of a cluster is about 70°, which decreases until an inch outside of the cluster finds it at 55°. So little difference in temperature could not produce much circulation; and without circulation, moisture will not accumulate. Still, a certainty remains that there is and must be some draft which must condense its moisture either inside or outside of the hive. Many apiarists know, and all observing ones ought to know, that when a colony clusters in the top of the hives the lower parts of the combs become covered with mold or moisture. Sometimes the moisture is of sufficient quantity to run out at the entrance. This moisture never would have accumulated there had there not been gusts of air warmer than the outside air forced in that direction.

There is, it appears, a small amount of warm air thrown off from a cluster of hibernating bees. This warm air, if it can not proceed upward, will go downward. A comparatively large share of it penetrates the solid board composing the side and cover of the hive, but still there is room left for disposal. What we need to provide is an arrangement of the hive that shall allow the upward movement of this surplus warm air. I call it surplus, as that is what I consider all drafts that proceed in a downward course in the brood-chamber, and do not pour out at the entrance. I feel safe to say, that not one colony in 100, when they are in the quiet state, will produce enough heat to fill an ordinary hive and pour out at the entrance; so if I am right we might as well give up ventilation at the bottom of the hive. All the advantage there is in leaving the bottom-board off the hive is to let out the foul air (which always sinks), and thereby prevent molding of the combs; but mold does not hurt bees, as they never consume it or attempt to move it until a flight. What is needed is an amount of ventilation at the top of the hive that will cause all drafts of the hive to move in an upward direction. Then there will be a constant movement upward through the brood-chamber; and if condensation takes place it will be above the cluster; and if the cluster is situated just below some loose chaff or forest leaves, the moisture will be out of the reach of the bees. It is not the results of cold air coming in contact with warm air that condense moisture, but the coming of the warm air in contact with the cold. When cold air comes in at the bottom of the hive, and condensation does not take place until it goes out at the top, if the outside air is not already saturated its tendency would be to absorb rather than discharge moisture.

Some may be of the opinion, that the circulation about the cluster would continually force the condensed moisture beyond the reach of the bees. This is partly the case. The heat and circulation of the cluster of bees do render the combs dry for some distance around the cluster; but, as I intimated before, there is not enough of this circulation of air, nor the force to drive it to all parts of the brood-chamber; and a part, and often it is a very large part, of the combs that is occupied by moisture, sometimes extending up at the side

of the cluster to the top-bars. Now, the presence of this moisture is nothing detrimental; but as time and days roll on, some of it, getting into honey-cells, ferments. In fact, I do not know but there is some other ingredient drawn in, or the pollen exerts some wonderful power, as it hardly seems possible for a mixture of honey and water to form so sour and sticky a mess as is often found.

From this foul accumulation proceeds an acrid fume which (unlike the gas spoken of before) rises to the top of the brood-chamber and there continues to accumulate, making the bees uneasy, and they begin to move about; some of them attempt to move the moisture, others sip sour honey; but generally the bees exercise violently, and consequently die of early old age. The last of the bees in the colony, finding it a hard matter to keep warm, are forced to activity, and the consumption of honey, which, taken on to a cold and disordered stomach, passes into the intestines and forms the watery and half-digested liquid that causes the distension of the bees, and soiling of the surroundings, in case of true bee-diarrhea.

Those who winter their bees with tightly sealed brood-chambers are often heard to complain that their bees got restless and uneasy from being too warm. My experience has verified that it is not the *warmth*, but it is the *fume* of the sour and fermenting mass below, rising and accumulating in the upper portions of the brood-chamber; and the removal of the solid cover at such a time would convince any person of the truth of my statement.

C. W. DAYTON.

Bradford, Iowa.

PIPING OF QUEENS.

ALSO, CAN A QUEEN FLY AS SOON AS HATCHED?

I WAS very much astonished at Mr. E. S. Miner's article, found on page 778, Oct. No., and at friend Root's "supposing" the piping noise of queens is made with their wings. Why I was astonished at Bro. Miner, was that I have watched scores of queens in the act of piping, and never yet saw one move her wings further than a little tremulous motion produced by the tremor of the body. I am no scientist, but believe the noise comes from the inside of the thorax, from all the observations I have taken. Why I have watched this matter thus closely, was because Quinby, in his "Mysteries of Bee-Keeping Explained," attributes the noise to the queen's wings. In nearly every thing Quinby wrote in said book I found him unusually correct; so when I heard, for the first time, that a queen was piping on a frame I held in my hand, of course I expected to see her go through an operation as described by Bro. Miner. Instead of this she merely drew her body down a little closer to the comb and uttered the note, without moving, save the tremulous motion spoken of above. Since then I have watched scores, as I said before, only to see the same thing. However, I might not be so positive regarding the matter, that the wings are no help in making the noise, were it not that I have often heard old queens pipe when they had their wings clipped. As I keep all of my queens' wings clipped, it often happens, during a rush of swarming, that many of my swarms are allowed to return back where they came from, to wait until another day, when I can attend to them. In such cases, old queens will, quite frequently, pipe,

A year or two ago I had a swarm kept back by rainy weather till the young queens were about hatching, when it came out. For some reason which I do not now remember, they were returned, and the next morning I went to cut out the queen-cells to save them, when I heard the old queen piping loudly—in fact, the loudest I ever heard a queen. This queen I know had only very short stubs of wings, as I often clip every bit of all four of the wings off which I can get off, so I was again curious regarding the matter, and watched her for several minutes. The performance was the same as with the others, so the matter was for ever settled, in my mind, that the noise in piping is not made with the wings.

Now, I would not say a word regarding the so-called "nonsense" of queens piping in the cells were it not that I wish to correct what I consider another mistake, which is, that some assert that a queen just matured can fly. Perhaps there is no one point in bee-keeping that I have given so careful attention to as this. What I mean by a queen just matured, is, such a one as leaves the cell at the time she is ready to come out, or mature; such as hatch first in a colony, or such as are hatched in a lamp-nursery. All such queens can not fly, any more than can a worker just hatched, nor peep either, and do not do so under 12 hours from the time of hatching. My observations say a queen must be 12 or more hours old to either peep or fly, and she can fly as soon as she can peep, whether she is in the cell at this time or not. I am not surer of any thing in bee-keeping than I am that *queens* peep in the cell, for I have had them do so while I had my ear to the cell listening. Let me explain a little:

Three queen-cells on one comb are sealed at the same time; and if nature has its course, all will mature in seven days, during warm July weather. If the bees do not wish to swarm, all three will be allowed to come out of the cells at once, when soon all but one will be killed, none of which can fly previous to killing. If the colony is an extremely strong one they may run about unharmed for an indefinite period, *a la* Jones, and might stay long enough so some might fly. If other cells not so near maturity are in the hive they will be destroyed, so that no piping will be heard.

Now, we will take the same three cells again, but this time the colony desires to swarm. One of the three is allowed to hatch while the other two are prevented from leaving the cell by the bees clustering about them. These queens mature the same, and are just as old as is the one which is roaming over the combs. They cut the capping of the cell the same as did the other, but the bees put wax over the joint all around, except a little spot from 1-32 to 1-16 of an inch long, through which the queen puts her tongue, to be fed by the bees, which they do as often as food is required. Not far from 20 to 24 hours elapse, when the queen that is out is old enough to think of leading out the swarm, so she begins piping, which she continues to do 20 to 30 hours longer, when, if the weather is good, the swarm issues with this queen, she going out with the very first bees of the swarm. The other two queens are just as old as the one gone out, and have been piping in their cells nearly as long as the other piped outside. They are also ready to fly as soon as the bees or the apiarist lets them out, and often get out with the latter end of the swarm, so

we frequently find from two to 20 queens with after-swarms. These queens have been matured two days, even if they are seen just hatching, and, in my opinion, no queen of any race, Syrian or any other, can fly when first hatched, unless she has been kept back by the bees. G. M. DOOLITTLE.

Borodino, N. Y., Oct., 1886.

I too, friend D., have often watched queens while they were uttering their piping note; but from the movement of the body, I always supposed the wings had something to do with it; although I did not and do not now think the note was caused by rubbing the visible portions of the wings together. In fact, I do not know much about it? Will Prof. Cook or Prof. McLain tell us something about it? I have seen queens take wing within a few minutes from emerging from the cell; but very likely they were by some means, or for some reason or other, kept in the cell until they were several hours or perhaps a day old. No doubt you are right about it.

HOW TO MAKE LABELS STICK TO THE CANS.

A RECIPE FOR HONEY-CAKES.

I SHOULD like to tell some of the many readers of GLEANINGS how to put labels on tin cans, and have them stick so they will not come off. Make a thin solution of white glue, then thicken it with wheat flour until it is about the consistency of paste. This is to be made the same as any other paste. Cover one side of the label with the paste, then put on the honey can or pail, and I think you will not have any trouble about the labels coming off. I would suggest that there be something more printed on the labels, perhaps some recipe for cake or pies. Of course, they are to be made with honey, or, at least, part honey. We ought to think of some way to help sell more honey, and I think this way we have spoken of may help the bee-keepers to sell more honey, provided the honey is pure and nice.

I will send you a recipe for cake. It is nice to have it warm for tea, or equally good when cold. One-half cup of honey; one-half cup of sugar; one-half cup of butter; one egg; two cups of flour; one cup of cold water; two teaspoonfuls of baking powder. Flavor with lemon or vanilla. This recipe will make one large loaf, or can be baked in gem-pans.

MRS. JENNIE M. JOHNSON.

Rexford Flats, N. Y., Oct. 9, 1886

NORTH-AMERICAN BEE-KEEPERS' SOCIETY AT INDIANAPOLIS.

Handling and Caring for Liquid Honey.

SOME VALUABLE FACTS ELICITED FROM FRIEND MUTH AT THE INDIANAPOLIS CONVENTION.

THE following facts were brought out by a series of persistent questionings, and I presume friend Muth was wakened up to give them with a little more earnestness because one or two in the convention seemed to think they knew more about it than he did. Please bear in mind, friends, that Mr. Muth has probably handled more liquid honey than any other man

on the face of the earth. He has had experience with it by the hundreds of barrels, and has kept it for years, and finally disposed of it all, I presume, at a paying figure. Friend M. is by no means a man who does business without pay.

Perhaps many of the friends remember the position he has always taken, that honey need not be left to ripen in the combs, but that it will ripen itself, if left exposed to the air, in almost any kind of open vessel. Some of us have been pretty much decided against this; but when the matter was fully explained at the convention, I began to feel ashamed of myself that I had not perceived it before. For instance, if we have a quantity of extracted honey in an open vessel, the heaviest portion will soon sink to the bottom, and the thin honey will be found on the surface. Now, if I should dip a saucerful from the surface of a barrel of honey in this condition, and it should taste raw, thin, or even a little as though it were fermenting, I should be inclined to call the honey bad. Not so, however, says friend Muth. Put it where the air has free access; cover it with wire cloth or mosquito-netting, or any thing that will keep out insects and yet permit evaporation, and in due time it will come all right of itself; that is, when the surface has evaporated to the proper thickness, the taste of the honey will be much improved, and the bad flavor gone. Dr. Miller stated that he had taken honey which he supposed was sour, or spoiled; but he found that, when placed in a shallow vessel on the reservoir of the stove, it would, in the course of time, become thick, sweet, and good. Sometimes honey is gathered and barreled when so raw and unripened that it will expand so as to bulge the heads of the barrels. If you bore an auger-hole in to relieve the pressure, the honey will fly out and shoot against the ceiling overhead. A novice might say that this honey had fermented, and was all spoiled. Not so. Give it free vent; expose a considerable surface in open vessels—corks, pails, barrels, large tin cans, or whatever you may choose, and it will in time evaporate out all the watery part that rises to the surface, and become thick, nice, ripe honey. I presume, of course, these receptacles should be placed in a dry room, for a cellar might be so damp as to cause moisture to collect on the surface. Housewives frequently scald preserves to make them sweet, and succeed perfectly, even after there is quite a perceptible taste of fermentation. Now, the process of curing unripened honey is precisely the same, only it is done at ordinary temperatures. The result accomplished is the same—getting rid of the surplus moisture. If you spill some honey, and let it remain several days, you may notice it gets thick, and finally becomes like wax or gum. It slowly parts with a portion of its water. Honey in an open vessel will do the same thing, if you give it plenty of time. The warmer and drier the room, I presume, the better. Friend Doolittle does the same thing with comb honey, to evaporate and thicken the honey in the unsealed cells; and he does this, as you may remember, in what he calls a honey-room; namely, a room with plenty of windows, so

that the sun may raise the temperature to a high degree.

My friends, if you want evaporation to go on rapidly you must also have a strong current of air through the room. A few days ago I undertook to dry some green corn placed on shallow pans in the greenhouse. It got very hot indeed, but it just soured very promptly without getting dry a bit. The same pans, placed in the open air in the sun, dried the corn at once, without any souring at all. In the latter case the air was constantly changing above the corn. In the greenhouse it was, to some extent, close or confined. We did not have ventilators enough to get a constant change in the air above the corn, as it gets when it is out in the wind as well as in the sun.

The following letter, bearing on this matter, is just at hand :

I shipped 5 iron - jacket 10 - gallon cans, with extracted honey, weighing 115 pounds each, last October or November, to Messrs. — — —, and to-day I received the inclosed account. Please read account, letter, etc., and review circumstances. It seems to me proper for you to advertise such merchants as frauds, and protect the apiarist from losing his hard-earned products. CHAS. DOREMAN.

Pittsburg, Texas, Oct. 5, 1886.

The commission men returned 2½ cts. per lb. for the above honey, saying that it so soured they were obliged to get rid of it for what it would bring. After paying the freight and all other expenses, friend D. received less than one dollar for five iron-jacket ten-gallon cans full of honey. Now, it is quite probable, that, had the commission men understood the matter referred to above, the honey could all have been restored to a good article with a very little trouble.

QUEENS FOR HONEY, INSTEAD OF QUEENS FOR YELLOW BANDS.

Dr. Miller remarked that he had two colonies of Italian bees that gathered white honey, resembling clover in taste, at the same time that all the rest of the apiary was gathering dark honey from buckwheat. Others have probably had a similar experience. The honey was probably gathered from red clover, as this is in bloom at the same time with buckwheat. Well, Dr. Miller asked the question, if it were not likely that he could get a strain of bees that would gather clover honey in the fall by raising queens from these two colonies. I presume that all present at the convention had no doubt but this trait could be encouraged and fixed in a few generations; but Prof. McLain remarked that we want to raise *drones* from these desirable colonies — not *queens*; for it is a recognized fact in producing new strains, that the male could have by far the greater influence. For instance, as an experiment I have been raising chicks from some of my small hens that were extra good producers. One of these hens was a Brown Leghorn, and a pretty dark-colored one at that. She was crossed with a Light Brahma, and the greater part of her chicks closely resembled the male bird, although in size and movement they much resembled the little dark mother. I made a similar cross with Langshans, and

these chicks, too, resembled the male bird so much that they were very fair Light Brahmas.

Again, my cousin, D. E. Fenn, of Tallmadge, O., is an importer of hornless cattle. As a matter of course, he talks eloquently in regard to the advantage of cattle without horns. The fact that they have no dangerous weapon, ready to use at a moment's notice, removes temptation, and therefore they are of mild and gentle disposition, etc. These cattle were imported from across the ocean, and the males are, many of them, worth a great pile of money. People ask how they are to get their money back on such an expensive investment. Now, here is the point: Cousin Fenn has experimented largely in crossing common stock, with the view of shortening or getting rid of their horns; and, strange to tell, where the male parent is of this hornless breed, no matter what the female may be, the progeny have lost their horns; but where the male has horns, and the female none, the progeny hold on to the horns. So you see that Prof. McLain may be right in scolding because we talk continually about getting queens for new blood, and say so little about the drones. Now, then: When you pay a good deal of money for an imported queen, or a choice home-bred queen, if you please, go right at it at once and prevent drone-rearing in all your other stocks, but encourage an abundance of drones from your imported, or choice queen, in every way in your power; that is, make this queen furnish drones enough to meet all the young queens you raise, or that may be raised without your knowledge.

WIRE CLOTH FOR SEPARATORS.

Friend Betsinger, who was one of the first to use tin separators as we now use them, has been experimenting a good many years on different materials for separators. He has settled down upon galvanized wire cloth with meshes large enough to let the worker-bees pass through. Of course, a greater space is required between the combs of capped honey where even a wire-cloth separator is used; but he thinks, aside from that, the bees go to work in sections just as well as if no separators were used at all. He says the bees build no bridge-combs against this wire cloth. As nearly as I can judge by the looks of the wire cloth, it is the same thing we advertise and sell for fish-ponds, four meshes to the inch.

THE PROPER SPACING OF FRAMES, A LA POND.

THE RESULTS AS TRIED BY A SCHOOLMASTER.

THE editorial comments on Mr. J. E. Pond's article in GLEANINGS of Oct. 1, p. 779, open for discussion a question of great interest to every bee-keeper who is working for comb honey. I can not agree with friend Pond's statement, that "the production of brood is in our own hands," through the proper spacing of frames. In my experiments during the past summer, with hives constructed on the Heddon plan, I noticed that sealed honey and sealed brood occupied cells of a uniform depth. These combs were built on full sheets of foundation; and when honey and

brood were sealed, the surfaces were "as flat as a board." But that fact did not deter the bees from filling the outer frames with honey early in the season, nor from occupying a narrow strip of the upper part of every brood-frame with stores. As soon as the bees began work in the sections I uncapped these stores in the brood-nest, and the two sections of the brood-chamber were inverted and interchanged. According to the theory of close spacing, this honey should have gone into the supers, but it didn't. Those contrary bees quietly gathered it off the bottom-board and put it back into the very cells it came out of, even replacing it below the brood. This is at variance, too, with the reversing theory; and since my experiments through two summers have invariably led to the same results I am forced to believe that neither of these plans of management will give us absolute control of the production of brood. Although we may succeed partially in overcoming that instinct of the bees that prompts them to surround their young with an abundance of food, we can not wholly control it.

Quite a number of the hives in my apiary are 14½ inches square inside, and hold frames ten inches deep. In some of these hives there are ten frames; in others nine. At no time in the season can I detect any difference in the brood area of a frame from a hive of ten frames, as compared with one from a hive of nine. The proportion is the same in both. But, of course, the ten-frame hive will have the advantage in the total area of brood, and only in that respect will it meet the conditions of Mr. Pond's theory. From these facts it will be seen that nine combs, closely spaced, will give no more brood than nine frames further apart; but there is one thing very evident: With combs wide apart, the bees will loaf in the brood-chamber all summer. This I have proven to my sorrow; but when the frames are crowded close together in the honey season, the bees use no ceremony in entering the supers. For placing this plan so plainly before beekeepers, friend Pond is entitled to the thanks of the entire fraternity.

Z. T. HAWK.

Denison, Iowa, Oct. 12, 1886.

Friend H., your experience is just about the same as ours has been; and I always had an opinion that loafing-room anywhere inside of the hive was a bad thing.—I emphatically favor crowding the bees up into the sections, or outside; that is, when honey is to be had in the fields plentifully.

CASE FOR SECTION AND SEPARATOR COMBINED.

SOMETHING THAT HAS AT LEAST THE CLAIM OF NOVELTY.

I WILL send you by mail one of our section boxes. We should like to have your opinion on it. You will see, on taking it apart, that it is in three pieces. The inside is like a common section, except that the bee-space is all on one side, and only on the bottom. The other two parts are covers to slip on over the shell. One is a little wider than the other.

To use the box, the narrowest cover is taken off and put away. Then they are a section closed on the back, and they can be entered only at the bottom, when they are on the hive; when they are

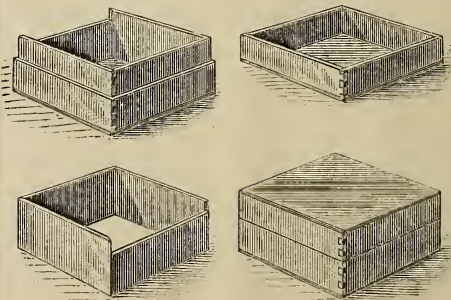
on the hive, the back of one row, it will be seen, answers as separators to the row behind it. When they are to be removed from the hive, lift them out of the case and remove the shell from its cover, and turn it over and replace it so that the part that the bees have not soiled with propolis comes on the front; put on the other cover that was laid away, and it is done.

I think I can see two objections that will be put down at the end of this. One is, that the bees will not enter them readily. We have given them a pretty fair trial this year with blacks, Italians, Syrians, and a strain called the Bellinzona strain of Italians (but we think they are Cyprians), and we have put open and closed boxes on the same hive, and we could see no difference in the way the bees entered them; and in some cases the closed boxes were filled first. The cost is \$15.00 a thousand, or 1½ cents each. Now you will say they cost too much. Let me give you a few figures. Common sections cost about \$5.00 per 1000. Separators cost \$1.50 per 100. It will take about 200 if they are used with the Root cases, which will amount to \$3.00. The cost of pasteboard boxes to hold sections of honey is \$9.00 per 1000. Add this up and you will have \$17.00. Our box answers the purpose of all three; besides, they come all put together. Besides that, honey in old-style sections sells at 20 cents, and honey in these boxes sells readily at 22 cents. This more than pays for the difference in the cost of the box. We get double Mrs. Chaddock's prices here for honey—20 cents per crate; 25 cents per box, open boxes.

RALPH E. GOULD.

Lisbon, Me., Sept. 26, 1886.

We can better explain to our readers the above invention by means of the cuts shown below. The whole thing is the well-known Hutchins' patent, dated 1874; but the box is made for a packing-box, and not for a honey-box at all. Many of our old readers will remember that it has been several times mentioned before. It is made exactly as our one-piece sections are made, folded by a V-shaped groove, dovetailed at the corners.



GOULD'S ARRANGEMENT FOR COMBINING A SECTION CASE AND SEPARATOR.

The lower figure on the right-hand side represents the packing-box as made by Hutchins since 1874. The two upper figures show the same with the cover removed. Now, the only change needed to make it ready to go on the hives is to cut out a portion of one side as represented in the cut, so as to make an entrance for the bees. The covers, which are a little shallower than the bottom, are to be laid away when the sec-

tions are placed on the hives. The other parts are simply placed on the hive close together, with the openings downward. They can be put on to any of the common cases in use, so as to handle them all together if you choose. Of course, a strip of foundation, or enough to fill the whole section, is to be put in to make the bees build their combs straight. When the sections are ready to come off the hives, slip on the covers that were laid away, and they are ready for shipment. When you wish to exhibit them to customers, slip off the *bottom* of the box instead of the top, and you have exposed to view that portion of the section that has never been exposed to the labors of the bees at all. It is as bright and clean as when it left the buzz-saw, for it has always been boxed up until this very moment. It is true, the bottom part of the box has been exposed to the travel of the bees, and may be somewhat gummed; but the ordinary lithographic labels, such as are used on our pasteboard boxes, will cover this bottom completely; and when they are placed on the shelves or counters in the grocery, the bottom can be viewed instead of the top of the box. The top of the box will be nice and clean, of course, for it was never exposed to the bees at all; in fact, these covers should be shut up in a dark box, to keep the sun from fading the fresh color of the wood.

Now, then, the thought comes up, this is all very well in theory, but who has ever tried it to know whether it will work or not? Well, here is what friend Gould reports:

We have run our bees entirely for comb honey. We started this spring with 18 swarms; we have now 34 swarms, and have taken about 1400 pounds of honey. The clover season was good, but I don't think we got a drop of basswood honey this year. We have had in the same yard this year, blacks, Syrians, Italians, and the Bellinzona strain; but the blacks have surpassed them all. The Bellinzona did nearly as well as the blacks, but they are so ugly it is more than it is worth to handle them. One swarm of blacks gave us 4 good swarms and 25 pounds of honey. The Syrians don't get ready to work till clover is all gone, and then there is nothing to do, and they take to robbing. I believe they had rather rob weak swarms than to get honey honestly. The fall flowers have been very good here.

RALPH E. GOULD.

Now, dear friends, you know all about it I do; but the arrangement is so exceedingly ingenious that I have decided to give friend G. this free advertisement. The price, too, for a section with a case to put it in is very reasonable. The only difficulty I see is the extreme accuracy of the workmanship required to have them fit exactly; and I am afraid there will have to be some scraping done when the boxes are taken from the hives, so as to allow the covers to go on. The sample sent us is also a little frail, and I should be afraid the moisture of the hive might cause the glue, used in putting the boxes together, to let go its hold. Friend Hutchins, however, is a large manufacturer, or, at least, I have been told so; and as he has been many years in the business, he probably knows how to make and use materials that will stand even dampness.

THE WEBSTER FUMIGATOR.

SOMETHING FROM THE INVENTOR.

I MUST thank you very much for your evidently unbiased expression of opinion on my fumigator; but I must "pick you to pieces" a little over the matter, and endeavor to set you right on one or two items. You take exception, in no small degree, to its smell, and also to its making your hands dirty, with what you call the "sticky" matter. All these effects are due to one cause; namely, improperly filling the sponge. Now, there is no "sticky" matter whatever used in the "agent," so that nothing sticky can possibly come from it; but the sponge, being improperly filled, the "agent" is blown on to the varnish of the bellows; and the varnish, being partially dissolved by the carbolic acid, so becomes sticky. Just try this: Pour a little of the agent on your hands. It will wash off directly with soap, and I know you can't feel any stickiness in it. If the sponge was properly filled, this would not happen; and, no portion of the agent having escaped, your clothes could not possibly smell of it.

Of course, there is a right and a wrong way of charging a smoker, and there is also a right and a wrong way of charging a fumigator. You'll say, "You ought to have told me this before." So I ought; but then, we are not exactly next-door neighbors.

I always, after charging the sponge, take a piece of old rag and squeeze the sponge in it, not removing it from the hooks; the rag prevents the acid getting on your hands, and takes up the surplus that escapes; after which there is no chance of any of the agent being forced out at the cap on your hands, clothes, or bellows.

I do not know whether the American bees are less amenable to the fumes of carbolic acid; but here in England I can handle them better with such than with smoke. On first using the fumigator one feels that it can't be of much use, the same as you did before trying it, as nothing is seen coming from it; whereas bee-keepers have been used to seeing volumes of smoke issuing from the smoker. During three weeks I examined over 200 stocks, and on no single occasion used smoke; in fact, I never use any, and am handling bees every day during the season. Now, you mustn't take the above as a "puff" on my invention, as, in America, such is of no use to me in England, in a monetary sense I mean, you being able to make and sell them as cheap, without sending here for them. My object is simply to lay before bee-keepers an appliance that will economize labor, and help to make the pursuit of bee-keeping more pleasant to its votaries. We are all aware that the smoker is one of the most unsatisfactory tools we have to use.

Wokingham, Berks Co., Eng. W. B. WEBSTER.

Thanks, friend W. Although you are not strictly a "near neighbor," yet even if the Atlantic does intervene, I feel as if I could reach your hand just the same. After pouring a little of the agent upon my fingers, as you directed, I find that it is not sticky. Your supposition, that I got a little of the liquid upon the varnish of the smoker bellows, is correct; and hence, not recognizing that the varnish was the real factor that caused the stickiness, I reported that the agent was "sticky." But as regards the

odor, I beg to take issue with you; and further trial with the agent confirms my first statement. I have no doubt but that you can handle 200 colonies successfully with the fumigator, and I believe I could do it here with only gentle bees; but with smoke I think I could examine the same number not only with more safety, but a half quicker. I speak whereof I know, for I have handled fifty colonies with your fumigator.

ERNEST.

THE TOAD, AND BEE-STINGS.

ALSO SOMETHING ABOUT KING-BIRDS CAPTURING BEES.

WHO has not heard many things against the toad? When a mere lad I was told that, should we touch but the skin of this old honest-looking acrobat, warts would cover the place that touched the cold clammy cuticle of his toadship. Strange it is, how such opinions gain currency. It is said, that misery loves company. I never quite believed it; but if it is ever true, we might think that our warty amphibian might like to sow a full crop of warts on whatever he saw or touched; but I early learned that, had he the wish, he has no power to bequeath his excrescences to aught except his own kith and kin. I always loved honesty, and there is a frankness and honesty in the look of the toad that captivated even my childhood's eye. So, per force, I had to shake hands, gain the acquaintance of, and make friends with, this honest, warty old toad. As a result, I received, not a wart, but a very companionable friend. Thus it was that I learned his many good traits.

Few of the animal kind are better insect-hunters than the toad. He delights to roll them, not as a sweet morsel *under* his tongue, but as a savory mouthful captured *by* his tongue. It is just fun to see a toad gobble down a fly, ant, or beetle. This is how he does it: The fly stands off some distance, winking in fancied security, when, all at once, the great jaws of his toadship open wide, and the fly darts into the cavernous mouth as though it were home, and he were sent for. Closer scrutiny shows that the long sticky tongue of the toad just runs out with a rush and "runs in" the unsuspecting fly. The fly isn't even asked if he wishes to go.

It were well if toads were content to feed only upon such insects as annoy or injure us; but not so. How often have bee-keepers seen this demure old batrachian quietly sitting at the entrance of the bee-hives, enjoying the cool evening breeze, and lapping up the belated worker-bees as they come heavily laden from the field! We can wish he wouldn't do it; but then, when we remember that he has been honestly employed all day, and remember, also, how good honey is, we can hardly visit him with our wrath for this one overt act. Candidly, the toad does so much good that I would not pronounce sentence of death, even if he does gulp down a few worker-bees. On the whole, he is a valuable friend. Nor would I raise my hives two or more feet from the earth to avoid him. I would the rather fence out the toads by a low close board fence, should he gain too great a fondness for my pets of the hive.

But, how about the stings? Is the toad so quick that he receives no sting? Nay, verily; no bee-

keeper will believe, as I once heard a person just stung by a bee say, "Lightning can not strike a bee so quickly as not to be stung." If, then, the celerity of the act does not preclude the sting, how is it that the toad does not run fairly yelping at the first capture? I think he either has very little feeling in his throat, or else, finding the bee so to his taste, he has become callous to the sting. From observations that I have made I think the former must be the case. The past summer I have examined two throats of toads killed, the one just after and the other soon after it had been feeding upon bees. In both cases, just as many stings were found fastened in the toad's throat as the toad had been noticed to capture. Thus we know that the bee does sting its enemy. I did not find inflammation. Thus we must believe that the throat is proof against the venom of the bee.

During the last of May, while visiting at my brother's, we saw many bees captured by king-birds. The bird would fly from some perch, capture a bee, and then fly back to the perch and swallow the prize. Bertie, my little boy, shot one of the birds, and found several worker-bees, not drones, in the bird's stomach. Who shall determine, in this case, whether or not the bird is stung? We shall try to the coming summer.

A. J. COOK.

Agricultural College, Mich., Oct. 19, 1886.

We are very much obliged indeed, friend C., for the facts you give us in the above. I do believe it is a Christian duty to teach our children not to fear toads; and, can't I add, even snakes? I find it almost impossible to keep our boys from killing almost every striped snake they find on our grounds; and since I have begun to get somewhat acquainted with them, I confess I rather like to see them gliding about so noiselessly. Should we not all learn to go slow in judging hastily these neighbors around us—the dumb neighbors as well as those that can talk and reason?

SHIPPING EARLY QUEENS FROM THE SOUTH.

DO BEES HEAR?

M. R. BRUBAKER, on page 484, writes very disparagingly of getting queens early in the season. He says he has never been able to do it earlier than he could do it himself.

Well, I think the reason is this: He orders (and so does almost every one else) of the "extensive breeders" of the South. Those who are well advertised have a large number of customers, and have had for several years [past, and are most prominently known as Southern breeders, and consequently they receive all, or nearly all, orders made to the South for queens—more than they can fill by June 1st, probably, in most instances, while the beginner gets but few orders, and has many more queens than he gets orders for—just as good queens, too, as those sent out by the "extensive breeders" of the South. I think if parties wanting queens early will act on this suggestion, they will be much more likely to get them. As to sending queens from the South to the North, early and late in the season, I can say this: In 1885, March 10, I mailed H. H. Peters, Leighton, Pa., a queen that was safely delivered on the 6th day after mailing. It snowed and sleeted heavily

on the 11th here in North Carolina, the day after it started. I also sent queens the same spring to Nebraska, April 4; arrived all right; to R. L. Taylor, Lapeer, Mich., March 28, 5 queens; they also arrived safely. This spring I mailed queens to Ohio, April 17; Canada, April 25; New York, April 17th; all arrived safely. I see no reason why queens can't be mailed safely to almost any point in the U. S. after April 15th any year. I for one have, and will do it again, if it be the Lord's will.

Out of 66 hives, spring count, I put sections on only 3, the others being run for bees and queens, for sale. One of these yielded me 20 lbs. of nice capped honey. May 20; sections, filled and capped, were taken off the other two, May 24. The honey-flow for this section began April 26th, and closed May 25th last spring.

JONES ENTRANCE-GUARDS.

These will not always confine queens. I had a swarm issue this spring that had a guard over the entrance. It confines drones all right.

DO BEES HEAR?

If not, why do they set up the call that they give when hiving, just as soon as they decide to accept the proffered home, and begin to enter it? Is it natural that any thing which has no hearing should be endowed with a voice—as a rule, such as bees, for instance? Of what effect to them would it be without the benefit of hearing one another? How do they locate the hum of bees when robbing one another, and come in numbers so quick, if they can't hear? ABBOTT L. SWINSON, 71-72.

Goldsboro, Wayne Co., N. C.

Friend S., it seems to me the evidence is pretty strong that bees *do* hear.—Very likely you are right about getting early queens from the South; but there is this one thing very certain: the man who has a supply on hand, ready to fill orders in March and April, will have a wonderful business when people get to find it out. See page 305, 1886.

NOT ABOUT BEES.

DR. MILLER TELLS OF HIS VISIT TO THE HOME OF THE HONEY-BEES.

AFTER making a visit to my old mother in Pennsylvania, I started to the N. A. Convention at Indianapolis, and stopped on my way at Medina. I suspect many of the readers of GLEANINGS would like to know something about Mr. Root at his own home, for I find my own family have been very much interested in hearing about it. Since I was at Medina before, he has got into his new house, and I was delighted to find such an elegant home. My own home is of a more common sort, and the surroundings by no means such as I would have if I were in a more money-making business; but I do enjoy seeing my friends have nice things. I remember but two things that I wanted to see different about Mr. Root's house. I wanted to see the fine brick walls covered with *Ampelopsis Veitchii*, and perhaps he may yet start some plants of this grand climber, for it takes some time for it to grow. There is, in the minds of some, a prejudice against this class of plants, which is, I think, not well founded. They think that the vines keep the brick walls damp, and thus hasten their decay. If they did do so, their great beauty would be a considerable compensa-

tion. But I think it quite possible that the reverse is the truth. The close foliage makes a dense covering, which protects the wall against the injurious heat of the sun and the beating rains, and it is quite possible that the little feet by which the plant attaches itself to the bricks serve to some extent as roots, and draw moisture from the wall. The other thing was this: As I went up to my bedroom I passed through a hall having a floor of wood of natural color, and up a flight of stairs, if I remember rightly, of ash, finished in natural color, and the good taste was shown to have no carpet to hide this beautifully finished wood; then on coming to my bedroom the first thing that met my eyes was a door, one side of which, instead of showing the natural grain of the wood, was covered over with paint, and then the attempt was made to imitate the natural grain by graining with paint. That riled me. To the educated eye, the plainest grain of even pine wood is preferable to the best graining; and in this case it could hardly have been because the door was made of pine, for in the very same room the beautiful inside shutters were nothing in the world but plain pine finished natural color. I hardly see why people will persist in getting up these shams in the way of graining, when the genuine grain of the plainest kind of wood, finished in the cheapest manner, looks so much better. Besides, when the graining is marred or knocked off, there is nothing left but to cover it all over again; whereas, the natural grain can not be knocked off; and when marred it can easily be brightened up again. So far as I could judge, the grounds about the house are laid out very nicely, although, of course, the trees and shrubbery have not had time yet to attain any great size.

I was a little disappointed, when I asked about some of the things planted on the lawn, to be told that the gardener could tell me all about them. I thought it was Mr. Root's business to know all about them himself, so as to enjoy them. But when I passed beyond these grounds to the market-garden he could answer all my questions, and many that I didn't ask. And, oh what growth! But when I pushed my foot through the finely pulverized loam I didn't wonder. Things couldn't help but grow in such soil. On this ground, stand still a few majestic maples, gorgeous in their rich autumn dress, which Mr. Root thinks must give way for more garden stuff. I hope the women-folks, with their natural love for the beautiful, will enter so earnest a protest against such ruthless vandalism that Mr. Root will be compelled to stay his hand.

I will not attempt to describe the great factory and the many happy faces I saw there. The lunch-room is quite an institution; and with its clean and well-cooked food it is no great wonder it should have an extensive patronage from others besides those in the immediate vicinity. Mr. Root has adopted the sensible and humane plan of having his family take dinner and supper sometimes, if not always, at the lunch-room. While he was eating dinner, some one came and told him that a customer wanted some celery, and there was none at the store. In a little while Mr. Root finished his dinner and started for the celery-patch, perhaps an eighth of a mile distant. I followed, puffing, after, for Mr. Root is great on a tramp, and I am getting pretty fat. Soon he came to the

long rows of celery, beautiful to look at, but not so nice to straddle over; but I straddled after him, although there seemed some little danger of being split in two thereby. To my relief, after straddling two or three rows he stepped on the summit of the others with something like an apology in an undertone for so doing. Then with a spading-fork he dug up the celery, trimmed off the roots, went and washed it at the pump, took it to the store, and, after weighing, got ten cents for it—hardly half the price I have seen the same amount sold for. I said, "Why didn't you let somebody else do this?"

He replied, "The boys were not through dinner yet, and I didn't like to ask them."

"Then let the customer wait," said I.

I don't remember exactly what answer he made. As one of the proprietors of the publisher of GLEANINGS, (for have we not all a kind of proprietorship in GLEANINGS and its founder?) I protest against his frittering away his time in things of this kind that could be done just as well without him, and wherein his time will not net him more than perhaps 50 cents a day. It would be better for Mr. Root and the world at large if he would get it into his restless head that it is his religious duty to cultivate a little wholesome laziness, and save himself for a longer life instead of being cut off in the midst of his usefulness. I am very glad to believe that in his son and son-in-law he has very worthy assistants. If I am not mistaken, Ernest bids fair, with his candid way of viewing things, and his keen habits of observation, to make a better bee-keeper than even his father was. If it were not for trenching on private ground, I should like to speak of Mr. Root's matronly wife and interesting family, but I forbear. I said to little Huber (he's a regular perpetual motion), "We have two cows at our house." He promptly replied, "Fudge! Uncle Hen has more than that."

One of the last things I saw as I took my way to the station was one of the \$4.00 wheelbarrows. I stopped to examine it carefully and admire its beautiful appearance as well as nice construction, and between you and me it's better than my cheap one; but I wouldn't gratify Mr. Root by saying so.

Marengo, Ill., Oct. 19, 1886.

C. C. MILLER.

Friend M., I want to protest a little. You do not understand me, and nobody seems to understand me, unless it is my good friend Mrs. Chaddock. It won't wear me out at all to get out in the lots after celery; on the contrary, I am, almost all day long, wanting some excuse for tramping out over the lots, and especially during this beautiful fall weather. If somebody should come for fifty dollars' worth of chaff hives, you would not see me budge an inch; but if he were in a great hurry, and anxious to get away at the very earliest possible moment, John and Bert and Mr. Horn, and may be some more of them, would go without their dinners entirely to help him off—I am sure they would. Now, celery-growing is one of my latest hobbies; and they all know that, if somebody should come and want five cents' worth of celery I should just be delighted at the chance of getting it for him. Why, I would take off my hat, make my best bow, and invite him to go down into the field, if he looked as if he could tramp; and instead of being worn out by exercise, I should get

a new lease of life. When the weather is fine, and things are growing nicely, I am generally in such a hurry to get out into the fields I finish my dinner before any of the rest. During this dry fall weather we are engaged in introducing the "New Agriculture" down in the creek bottoms. We have routed the frogs, and the rich dark muck, in the bottom of the holes formed by the old creek-bed, shovels out just as nice as can be. Then we take a horse and stone-boat, and gather all the stones and rubbish that can be found anywhere in the neighborhood, to fill these reservoirs. Another thing I enjoy down in the fields is getting acquainted with my brood of Light Brahmas. They now roam over the greater part of our 18 acres; and when they see me down there they know there is going to be some fun and something good to eat.—In regard to the real wood itself, instead of the most artistic graining, I am with you exactly. When I build another house it shall all be natural wood. Our painter said he could make graining that would never crack and peel off; but there is one of the doors that is so cracked up that it looks "awful" already.—The reason why I could not give you the names of the plants in the dooryard was because I can not encumber my mind with so much. For instance, the names of the greater part of them are like the plant you mention—*Ampelopsis Veitchii*. Now, if plants with such names as these opened up an opportunity of teaching people who are out of work how to make a livelihood right at home in their own gardens, as does celery culture, then I might love to go into it. Just now I am heart and soul engaged in the work of telling people *what to do*, and *how to be happy while doing it*.

STEALING PROPOLIS, ETC.

HOW TO GET SIX GALLONS OF HONEY FROM A FOUR-GALLON KEG.

I PLACED a number of old rotten hives under the shade of a cherry-tree in the apiary, in order that the bees engaged in that particular line of business might, instead of a trip a mile or more to the gum swamp, help themselves to the large supply of propolis which lined the cracks and crevices of the hive; and seeing a number at work a few days since, I closely watched the *modus operandi* of obtaining and placing it on their so-called baskets. The particles bitten off are passed alternately to one and the other, and the amount apparently deposited on each is kept as equal as if weighed and measured with mathematical precision. On the wing, I suppose their line of flight would be uneven if a greater weight were placed on either side, or only one basket were loaded. Like Cowper's unwilling race-rider, the same weight was placed on either side to make the balance true.

BEES STEALING FROM EACH OTHER.

Hundreds of times I have noticed bees robbing, or stealing honey; but they are not confined to this particular article, for I saw an unusual theft perpetrated. A bee alighted where there were several others at work, and at once commenced to nibble away at the hard mass, but without success,

and, raising its head, stood motionless for a moment, seemingly in deep thought. A bee near by, and just ahead, whom she was eyeing, had nearly obtained a load of the wax, and was turning round and round with head down, pulling at a small particle, nearly detached from the mass, when suddenly, and as quick as thought, she seized one of the basket-loads, and, with mandibles and fore legs, tore it from the basket of the industrious worker, and appropriated it to her own use. The thought occurred to me, "Did they belong to the same colony?" If it is the queen that imparts the peculiar scent whereby each worker recognizes the inmates of that family, would it not be remarkable that this scent is retained for hours, on the body of workers in the sun and wind, and continue after contact with, and frequently enveloped in, highly scented blooms?

BEEES SHEDDING.

Something new I learned lately; and as a new edition of your A B C is frequently issued, with changes of old and the addition of new matter, I contribute it for the enlightenment of your readers. On a visit this spring to a man living 10 or 12 miles from me in the hills, and who wished to sell his bees, I learned something new. His bees were in plain board hives, with cross-sticks through the middle, and placed at convenient points about the yard, under trees and bushes. He knew as little about bees as he did of comets and the other heavenly bodies, and measured the knowledge of others on this and kindred subjects by his own meager supply. He was at my side as I examined the gums as best I could, making remarks as to its condition at each inspection. Turning a hive bottom upward (a colony of hybrids), I said to him, "Some of the bees in this hive are very pretty, and finely marked. They are beautiful."

"Yes," he said, very seriously and impressively, "you will find that all my bees will be as fine as these when they all shed off in the spring."

I made no answer to this unpublished information; but as we traded, it occurred to me that he thought this was the nail that drove the trade and induced me to take the bees, that all the bees would be finer-looking when they "shed off" in the spring. You have noticed old bees shed off, or that had rubbed off the hairs, or fuzz, of their bodies (thorax) passing between the combs, and in various other ways; but this shedding, as the horse, cow, and other animals, will be an entirely new idea to you.

BEEES PACKING.

Esquire D. and a neighbor were discussing the productiveness of swarms hived in different ways and at different times, when his neighbor, becoming very enthusiastic in praise of a swarm placed the year before in a 4-gallon keg, said, "They went to work—never saw bees do better, and the first time I robbed it I took six gallons of nice strained honey."

"How's that?" inquired the 'squire? "You hived them in a 4-gallon keg, and took 6 gallons of honey from them? That don't seem possible."

"Well, the fact is, it don't look possible, and wouldn't be with anything but bees; but you must remember they are the beatingest things on earth to pack. We took 6 gallons of nice honey."

Murfreesboro, Tenn.

W. P. HENDERSON.

Friend H., the fact you give us about bees stealing from each other's legs is something

quite new. You ask if they belonged to the same colony. Now, perhaps you may think I have got a little wild when I say that recent observations convince me more and more that bees do not recognize each other by scent, but by actions and behavior. I have seen a nucleus made up of bees from three or four different colonies, that would, in just a few hours, defend themselves from robbers as perfectly as any old colony; and it is my belief that they would have repelled robbing bees from the same colony they had been taken from but a few hours before. The scent may have something to do with it; but I am satisfied that it is only a small factor, even if it has any thing to do with it at all. If this is true when bees meet each other in the fields, they have no means of telling whether they are from the same colony or not.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

CAN MELILOT BE USED FOR PASTURAGE?

IS mellilot, or sweet clover, good for hay or feed for stock in any shape? If so, do you think it will pay to raise it for that purpose? Will stock eat it as they would rye or any other grass? A friend of mine has a piece of land which he would like to seed in some kind of hardy clover for pasture, and I think mellilot is about the only variety which will stand our climate, as it is subject to drought. My bees are swarming again. Hives are full of brood, some even in the sections. In some cases I find 16 frames full of brood; no honey in lower frames; just about two inches along top-bars of upper. I am using eight-frame Simp. hives. What shall I do with them? M. BROERS.

Gonzales, Texas, Sept. 27, 1886.

Mellilot has been used to some extent for pasturage, but stock will rarely eat it if they can get any thing else. There is a particular stage in its growth, say when it is one foot or eight inches high, that the stalks are tender, and much like ordinary clover. At just this stage, some horses and cattle will eat it with avidity. As a rule, however, it has been abandoned as a forage plant.

LEAVES FOR PACKING; OTHER MATTERS.

I have just about finished packing my bees, leaving them on their summer stands. I have used forest-leaves, and believe them decidedly preferable to chaff or straw, inasmuch as they will not entice the mice. Chaff or straw usually has more or less grain mixed through it, and, of course, this is most inviting to the little fellows.

As I take a retrospective view of things, a few points come up which I feel like mentioning. I have wondered if others have been through what I have in introducing queens. In one instance, upon removing the lid at the time a queen was emerging, to my surprise she immediately took wing. I was fortunate enough to catch her, however, at the first grasp. At another time I selected eggs from a fine queen from which to rear a queen for a colony that had repeatedly rejected the queens I had sought to introduce. The time of exit for the queen, from egg, had come, so went to see her swing open her

portal; and, what was my astonishment to find her making her way out at the base of the cell—a long fine one! Well, I thought, what kind of a queen is this? and as I could not brook delay I used my pen-knife to emancipate her “royal highness,” and out came—a majestic graceful form? No; a flirting, mincing worker. Of course, I had read of such things, but this was my first experience. I want to add, this colony has a queen now that is still laying, in spite of the cold days and nights.

240 LBS. OF EXTRACTED HONEY PER COLONY.

My bees have averaged me 240 lbs. to the colony (spring count). I have extracted most of my honey, and marketed it, in a clear white-glass jar, manufactured by the Independent Glass Co., Pittsburgh, Pa. Pints cost only \$8.50 per gross. They hold 1½ lbs. I notice Mason is making a flint jar now. The old Mason jar, with the green tinge, was not a desirable receptacle, as it gave the honey a bad appearance. The jars I speak of have a glass top which screws down upon a rubber. With all, they make a very nice and attractive parcel. I have received 30 cts. for every jar, so you see my bees have brought me in roundly. In all this I remember Him who is the source and measure of all God's goodness, and I send up most gratefully the incense of praise. FRANK C. BLOUNT.

Lawndale, Ill., Oct. 16, 1886.

Friend B., I have never thought of the reason you give for preferring leaves to any thing else for packing; namely, that there is nothing in the leaves that mice would want; and I believe reports seem to indicate that there is no better absorbent known than forest-leaves. By the way, forest-leaves are coming much in favor, not only for protection, but as a fertilizing material, and to make hard clay soils light and friable.—There is another advantage in using fruit-jars for honey—they are always worth to the purchaser all they cost, and I have many times wondered why they were not used in place of the common jars and bottles that are of little or no use after the honey is consumed. Jars made of flint glass are rapidly coming into favor.

CAN A BLACK QUEEN BE THE MOTHER OF A PURE ITALIAN QUEEN AND OF A BLACK QUEEN?

What is it? Well, I am going to leave it for you to name for me. I have invited all my bee-keeping friends here in New Bedford to see a queen I raised this year, the last of June. They say they think I have a curiosity. In the first place I had a black queen in a swarm that came to me two years ago, and I hived it June, 1884. Last May she cast a swarm the 24th, 25th, and 26th, with Alley's queen-trap attached to the entrance. The swarm went back twice. The third day the queen got hung trying to force her way through the perforated zinc, and, as a result, died. I felt sorry, for she had been a very profitable queen. She left one queen hatch-cd, one still in the cell. May 28th I divided the colony. I liberated the confined queen, and let her run with one-half the bees. I put the liberated queen and the second half into another hive. No. 1 has a black queen; has filled both the upper and lower stories with bees, and I shall get some surplus from them. No. 2 has a queen, large and prolific, with three distinct yellow bands, and is as handsome as any one wants to look at. I have six hives, all Italians save one. I closed the hybrid drones in until

after she was fertilized. Her young bees have been examined by the best judge I can get here, and not the least trace of hybrid can be found in the hive, all the old ones having died out.

July 21st I took a small handful of bees and gave them two frames of brood, one with eggs. They raised a queen, which was purely mated. When the queen was laying I gave her bees a frame of brood, and another partly filled with empty comb. August 21st she had four frames well covered with bees and brood. Two days ago I gave them one more frame of empty comb, with 3 or 4 lbs. of sealed honey, and one frame of 1dn. They have six frames now, and a prospect of doing well. This is my first nucleus. If I can get them to cover six frames I can carry them through the winter all right, and have a good start in the spring. I think a great deal of fall queens.

What is a pound of new comb worth when the selling price of honey is 25 cts. per lb., and 50 lbs. is considered a good yield per hive?

New Bedford, Mass.

CHAS. L. ELDRIDGE.

I think the queen you mention, with three distinct yellow bands, is, without question, at least partly black blood; and having met an Italian drone it is nothing strange that her worker-bees are all of them well marked. No doubt many queens have been pronounced full blood whose worker-bees were one-fourth or more black bees; and, on the other hand, many have, very likely, been pronounced hybrid that were full-blood Italian. The reason why the two queens, although from the same mother, have given queens so unlike, is probably in a line with the fact that many Italian queens, after having met a black drone, produce worker-progeny, some black, some three-banded, and some apparently hybrid.—Your concluding query, I presume, refers to the value per pound of new white comb to fit into section boxes. If it were not for the additional trouble of fastening in these pieces of white comb, compared with putting in foundation, I should think they might be worth \$1.00 per pound, or even more.

MAKING HIVES OF PLASTER OF PARIS.

I see that John Craycraft, of Altoona, Orange Co., Florida, has got started on this road. Why not adopt my invention? I have been using cement hives for six years. I mold mine out of plaster of Paris. I have about 100 of them in use. I have some that I have wintered six years in succession. They are warmer in winter and cooler in summer; are moth-proof as well as robber-proof, and cheaper than any wooden hive in the North. The lower story needs to be molded large enough to take in a box so as to leave a chamber of two inches all around and under it to fill with chaff; then put chaff on top of the swarm. They will winter well in this cold latitude. In the South, the cement is all that is needed. They need no paint, and have given good satisfaction where tried. They can be molded so as to fit any frame.

I started in the spring with 70 colonies, and increased to 120, mostly by artificial swarming. I have taken 2500 lbs. of extracted and 1500 lbs. of comb honey in 1-lb. sections. The extracted is selling at 9 cts., and comb 12½ cts. The season opened up as well as I ever saw. I had a good

flow until the drought set in, which was about the middle of May. They gathered but little foul honey, and are in good condition for wintering.

New Sharon, Ia., Oct. 7, 1886. GEORGE BRIGGS.

No doubt, friend B., plaster of Paris will answer excellently for bee-hives, but I think most of us would find it more expensive in the end, aside from the fact that it is so easily injured. I think I should want my hives painted for looks, if for nothing more; and painted plaster of Paris looks about as unsightly as a thing can well look, after it gets bumped and punched, and the corners are knocked off.

A QUEEN'S LOVE FOR HER OLD HOME.

Will you kindly throw a little light on a small matter that puzzled me somewhat in my bee-keeping this summer, and that seems to me to be rather unusual? I give you an extract from my diary:

Monday, Aug. 2, 1 P. M.—I caught and killed an old queen in black colony No. 6. At the same time I caught and eaged a handsome, young, prolific Italian queen in colony No. 4, standing about twenty feet north-east from No. 6, both hives facing south. I put the caged queen on top of the frames in No. 6 till evening. At 7 P. M. I found the bees quiet about the cage. I removed the drone-trap (Jones's), smoked the bees and let the queen run in at the entrance, according to J. E. Pond, page 530. I replaced the drone-trap, and thought all was right. Friday, Aug. 6, I examined Italian colony No. 4, and was pleased to find 15 royal cells in different stages of development. Saturday evening, the 7th, I examined black No. 6, to see if my young Italian queen was all right, but I could not find her. Monday afternoon, Aug. 9, looking over Italian No. 4, I was surprised to find not a vestige of a royal cell left, but found quite a number of royal cells started in black No. 6. Tuesday morning, the 10th, with the help of my son, I examined Italian No. 4, and found the queen back in her own family again all right. I then went to black No. 6, cut out all royal cells, and gave Italian brood, which perhaps I might have avoided, as I found very young larvae, apparently from eggs left by the young queen. About the end of August I introduced her to a hybrid stock in the same way, about 40 feet west. She was received, and remains quiet.

F. CLARE.

L'Original, Ont., Can., Sept. 27, 1886.

The circumstance you relate is not common, yet instances of similar character have appeared in GLEANINGS at different times. As the queen was, I should judge, fertilized in No. 4, she had no difficulty, after leaving the black colony, in finding her old home.

A VISIT TO M. H. HUNT'S APIARY; THE ADVANTAGES OF WINDBREAKS.

On the 13th and 14th of the present month I made a visit to the apiary of Mr. M. H. Hunt, of Bell Branch, and was so well pleased with his manner of handling bees and honey that I have decided to follow his mode of manipulation until I am certain that I have found something better. My experience in wintering in single-walled hives is decidedly in favor of good windbreaks. Fourteen colonies (9 weak, 5 strong), with good packing and windbreak, all came through in good condition; of 13 colonies, all strong in bees and stores, with good packing and no windbreak, 12 died before spring opened; and I think there could have been no

difference in their stores, as it would not exceed 60 feet from one corner of my apiary to the other, and all had natural stores. I shall start this winter with 25 colonies, all strong in bees and stores, and hope to be able to make a good report in the spring.

ISAAC T. GOULD.

Corunna, Mich., Sept. 27, 1886.

DOES DAMP AIR RISE?

I am ever so much pleased with those bee-feeders. As soon as I got them unpacked I had to sell some of them to my neighbors for bread-pans and custard-dishes, and I don't know what else they were going to use them for. I want to ask you one question: Does foul or damp air settle to the bottom of a bee-house, or does it rise to the top? This question I have never got solved. Almost every one disagrees on it. My ventilator at the bottom of is one inch in diameter, coming up through the floor. My ventilator at the top is a five-inch pipe; and what I want to know is, how near to the floor does my upper ventilation need to come down?

BENJ. E. RICE.

Boscobel, Wis., Oct. 4, 1886.

Friend R., your question is not an easy one to answer. Damp air is certainly lighter than dry air at the same temperature. In a bee-house, however, the bees warm the air at the same time that they dampen it by the moisture from their breath, and this damp warm air, of course, rises, and would pass out of the ventilator if there were room enough for cold air to come up through the floor and take its place; but a passage one inch in diameter would by no means admit of this. Where the tube can be attached to a stovepipe, so as to get up a considerable draft, it is usually run down to within a few inches of the floor, that it may draw up the cold air and take it away. In this case it would also remove any carbonic acid that might have been given off by the bees and settled at the bottom. Carbonic-acid gas is a great deal heavier than common air, and sometimes collects over the bottom of the floor, making the air poisonous. If your ventilator is not connected with a chimney or stovepipe, I would have it reach just through the ceiling.

THE HEDDON HIVE.

I spent a day at the convention at Indianapolis last week, and was very much interested in the proceedings, and in examining the various articles exhibited. I wanted to see that marvelous hive of Mr. Heddon's. It is a beauty, but I do not think it will suit us in this climate. We can not afford to have a summer hive and a winter hive. We must have one that will answer for both. For that purpose we must have a chaff hive. I see no way of making a chaff hive out of the Heddon hive. It may be very fine for summer, but will not do for wintering on the summer stands. I know nothing better than your chaff hive for that purpose. I have 26 of them in my apiary now, and they work nicely. The only objection to them is, that they are inconvenient in the summer, when you have the top part full of wide frames, and want to get into the lower part. How do you manage it? What is the reason you can not construct a case like the Heddon surplus-case, or like the surplus-case that was on the hive exhibited by Bro. Demaree, and have it to fit into your chaff hive, so you could lift out the

case, sections and all, at one time? Can not such a thing be made so it will work? J. H. LOUDEN.

Bloomington, Ind., Oct. 18, 1886.

Friend L., the difficulty of getting out the lower frames when the upper ones are full of sections has never been remedied; that is, there has never been a remedy suggested that will not make the hive more complicated, and more troublesome to work than to have it as it is—at least, that is my opinion. Of course, you can have Heddon crates, or crates of other styles, to lift out, instead of lifting out the wide frames, and we now make them with crates instead of wide frames when preferred; but you will find it is some trouble to lift a couple of crates when they are filled with honey, and put them back again. The difficulty, however, is not so very great as might be imagined; for few honey-producers are in the habit of disturbing the brood-nest when the bees are at work in surplus-receptacles.

A FRAME HIVE PRECEDING LANGSTROTH'S.

C. H. Lake, of Baltimore, was at the Elkton, Md., Fair. He, among an extensive exhibit there, had the effects of Colvin in the apiarian line, and made some startling statements. He had a hive presented by Otto, king of Greece, to Mr. Colvin, in use in Greece long before Mr. Langstroth's invention of the "frame." This hive opened on one side, from which "frames" were pushed in on rabbets, or cleats. There were three sets of frames, of about 8 or 10 each, above each other, with $\frac{3}{8}$ -inch space between and at the ends. He also read quotations from old manuscripts, describing these hives, and also showing that separators were in use several centuries ago. If any of this is new to you, I wish you would write to him for his evidence, or go and see these curiosities and papers.

CHLOROFORM WILL CONQUER.

I have had a hybrid colony queenless for more than a month, which has resisted all the methods of introducing queens until yesterday. Three fine queens have been killed, after prolonged efforts with each. At the Elkton Fair, Mr. Lake had an albino queen-cell to hatch, and I came in possession of the queen. The next day at noon I presented the same to this hybrid colony, which at once began to tear her to pieces. I seized and caged her. I then dropped into the bottom of this hive—a 3-frame nucleus, about one teaspoonful of chloroform; placed the queen in, and closed the hive up. I waited until all became quiet—about 10 minutes, when, on looking in, a good share of the bees were on the bottom-board, anesthetized. I found the queen, held her in my hand until she could walk around pretty well, when I placed her on a comb, and again closed up the hive until the bees were well recovered, when I carried the colony out to its old location, and allowed the bees out to enter. The queen to-day is all right.

S. W. MORRISON, M. D.

Oxford, Pa., Oct. 11, 1886.

We are fully conversant with the facts you mention, friend M., and I believe Mr. Langstroth knew all about it after his frame and hive were invented, for he and Mr. Colvin were very intimate friends. You will notice Mr. Colvin's name mentioned several times in Mr. Langstroth's book. These Grecian hives were never made practicable.

and the simplicity of the L. frame and hive, compared with them, is what gave bee-keeping such a great impetus at the time of friend L.'s invention.—The matter of chloroform has been before our journals, and has been a good deal experimented on. Sometimes it answers nicely, as in your case; but at other times it does not. I do not know whether anybody uses it regularly now for introducing queens or not.

HOW TO PURIFY EXTRACTED HONEY; HONEY IN SODA-WATER.

Can you tell how to purify extracted honey, so there will not be any sediment? I could sell all my honey at a good figure to the bottling-works in Grand Rapids, for making a flavoring syrup for soda-fountains, but they fail in filtering it in any way so that it will be clear. They tried, but there would be a sediment of a darkish color that spoiled it for use. This is a matter of no little importance to the bee-fraternity, as it would make quite a demand for honey, and that to make a good temperance drink. Perhaps A. J. Cook or others could answer through GLEANINGS.

Grandville, Mich., Oct. 9, 1886. J. S. WARNER.

Friend W., straining your honey through the cheese-cloth which we recommend and sell for the purpose, we think will remove every thing that can be objectionable. If your honey is very thick, it will have to be warmed to pass through readily. But in case this straining should not be sufficient, you can filter it through a bag made of coarse flannel. The particles of flannel will catch every particle of the finest dust that may be in the honey. If Prof. Cook has had experience in straining and filtering honey, we should be very glad to have him tell us about it.

WHAT RENT SHOULD BE PAID FOR THE USE OF LAND FOR AN APIARY?

Would you please inform me what is customary to pay in establishing an apiary on somebody's else land? Does the owner of the bees give a share, or pay money? I am thinking of taking part of my colonies away from home, but do not know what would be right to offer. Does the owner of the land generally have any thing else to do but to watch the bees that they be not molested, for instance?

Greenville, Ill., Oct. 12, 1886. GUSTAVE GROSS.

Friend G., it is a pretty hard matter to give an answer to your question, or, in fact, any question of the kind. It all rests on circumstances so much that the best we can say is, "As the parties may agree." If the owner of the land proposes to watch the bees, and keep away thieves, he should have a little more pay on this account. If he also proposes to look after swarms, and hive them, then his pay should be still better. So you see it depends on how much responsibility each party proposes to take. Sometimes a pound of honey for each colony left on the premises is considered sufficient rent. If that is not enough, say two pounds or more, or even five pounds, where swarms are looked after, etc.

A TREATISE ON FLORIDA, AND ITS RESOURCES.

To those of your readers interested in Florida, I take the liberty to say, that altogether the best book that has ever been written about the State is

Dr. Smith's. Dr. Smith is professor of geology at the University of Alabama, and was a special-census agent of U. S. A. His report gives all the bottom facts about Florida—the geology, physical geography, constituents of soil, growth, elevation, rainfall, adaptation of soils to particular crops, drainage, etc. Of course, it does not give the details in regard to the honey product and some other things, such as are furnished you by Hart and others, but all the fundamental facts are there. It forms a copy of the U. S. census. I do not know where a copy is to be had; but any one who wishes to know all about Florida ought to begin with it.

J. A. GOREE.

Tuscaloosa, Ala.

QUEEN-CATCHERS, AND CLIPPING QUEENS.

I have used an implement similar to Klimitz's queen-catcher for some time. I am in the city, and it will not do to run over town to take swarms out of neighbors' yards or from the shade-trees in the streets, so I clip the queens' wings. To catch up the wings by the fingers, with the feet always in motion, and then clip the wing, risks too much; danger comes in of getting a foot with the wing. Letting the queen rest on the knee is not always safe either, so I have a small sack made of mosquito-netting, which I pass over the open end of the cage; and as the queen runs into the sack out of the cage, I have her in the sack with her tail toward the opening. I withdraw the cage, lay it down, and turn back the ends of the sack, holding the queen in the sack by her head and body with the left hand; as soon as the wing is exposed I clip exactly what I want, and then release her. It takes a little longer time, but it is sure, and not the least danger of injury does the queen incur, and this is the main point. The cage I have used has ragged wire edges, which catch the bag. Mr. K.'s cage is better.

HONOR TO WHOM HONOR IS DUE.

Give everybody credit, is my motto, if it doesn't cost too much. Let Mr. Heddon have credit for his hive—it is a good one; Mr. Jones for his—it is equally good; let Mr. Heddon have all the credit the pollen theory is worth, and let Mr. Clarke hibernate the bees. Let all the army of reversible-frame inventors be pleased with themselves, and last, but not least, let Mr. Perrine have the credit of being the "Father of Adulteration of Honey." I believe that is what he claimed at the late congress in New Orleans. All I ask is, credit for the money I send.

S. C. BOYLSTON.

Charleston, S. C.

Friend B., your suggestion in regard to handling queens is good, but I think I should prefer to handle them with my naked fingers. They sometimes bite spitefully, it is true; but I am not afraid the queens will injure me, and I am pretty sure I shall not injure the queens. Your suggestions about giving credit are also good.

A LETTER FROM ONE OF OUR AUSTRALIAN FRIENDS.

I am interested a little in bees. I have ten hives. I commenced with one, a chance swarm, which came along in December, 1884; and since reading your A B C it seems more wonderful. You Americans can do almost any thing. I do not know that our country can produce honey like yours; but I have been told, since taking an interest in bees, of some of our farmers in the country districts having

as much as six tons of honey in one season from bees kept in all sorts of boxes. Nearly all the native trees here blossom—gums, box, and acacia—and just now in winter I see the Tasmanian blue gum (*Eucalyptus globulus*) is coming into blossom, and will continue until August. I have two Woodbury and eight Langstroth hives, or the same size as your Simplicity hives. The Bee-Keepers' Society here decided on that size. I see you have the cold to contend with, but we do not get snow here, and there is not more than two or three days wet, or weather when the bees can not work, and I notice now they are busy bringing in pollen. Sometimes we have four or five fine sunny days; the geraniums and marigolds I see bloom all the year round. Ours is not one of the best places for bees. It is very open, or plain, and not many trees.

Braybrook, Victoria, Australia. WILLIAM DABB.

We think Australia is making rapid strides in bee culture. We have filled quite a number of orders from there for machinery, etc. Thanks for your kind letter, friend D. I do not see why Australia should not give as good results as America. Are you sure the capabilities of your country have been as fully brought out as ours have?

STINGLESS BEES IN AUSTRALIA.

A correspondent from Queensland sends us the following:

Your correspondent, Mr. Henry Stewart, is not quite correct in stating, p. 208, GLEANINGS, that the stingless bee is found only in South and North America, and not in the other continents; at all events, we have a stingless bee in Queensland in two varieties, very similar in appearance, but their nests and combs are different. I send you herewith a pressed specimen of the bee for microscopic examination. They are such insignificant little things that I hardly think it would ever be worth while to cultivate them. The whole yield of a large colony is only about a quart. Their combs are certainly not constructed of wax, although it looks much like it. I tried to melt up a lot once, but got only a dark-brown sticky mass, which, however, proved a source of immense attraction to the bees in my apiary; for although there was an immense profusion of honey-flowers at the time, they seemed to give them up entirely, and devoted their whole attention to carrying away the brown sticky mass, and plastering it all over the inside of their hives. As I didn't want it there, I buried it, and so forced them to go about what I considered a more profitable occupation.

As I have started writing I may mention a curious circumstance which has just happened in my poultry-yard. A tiger cat got in one night, and, for apparently the pure delight in murder, killed two geese, two ducks, and one sitting hen and one of her chicks, leaving five unprotected orphans. The mother had laid only about a dozen eggs before she commenced to brood, and she had a sister in the yard that was just about to begin to lay. Well, next morning this young pullet with her fiery-red comb commenced to cluck, cluck, like a brooding hen, called the chickens to her, brooded over them at night, and has, in every respect, performed a mother's duties to her nephews and nieces, although she has never yet laid an egg. Formerly, if one of the chicks came near her while they were being fed she would peck at them furiously, but now she won't touch a morsel till they are all fully satisfied.

What a pity we can't teach the bees to behave in a similarly charitable manner to their relations who happen to fall into misfortune or distress!

ÆNEAS WALKER.

Redland, Queensland, Australia.

Many thanks for the samples of stingless bees you send us, friend W. I will forward them to Prof. Cook. Meanwhile I would say to our readers that the bees are about the size of a common house-fly — perhaps a little smaller. If a whole colony yields only a quart, however, we shall have to regard them more as a curiosity than any thing of practical value.

REPORTS ENCOURAGING.

A GOOD REPORT, AND FROM TEXAS TOO; FROM 108 TO 150, AND 12,000 LBS. OF HONEY.

I HERewith send you my report of this season's operations with my bees. I commenced the season with 108 colonies in medium condition. The spring was backward, and they had used all of their honey before there was sufficient new honey coming in to support them. Swarming was cut off to a great extent, but I got an increase of 42 colonies by natural swarms. I had about 80 swarms in all, but I put back all after-swarms and prime swarms that came out after the 20th of April.

The honey-flow commenced about the 25th of April on guajilla and continued about 20 days; the last 8 or 10 days being from cat-claw. The cat-claw honey-flow was cut short over 2 weeks. It usually lasts over 3 weeks. A very small caterpillar webbed up and destroyed the blooms. There has been no surplus gathered since to amount to any thing. I have taken 5000 lbs. of comb honey in bulk, and 7000 lbs. of extracted honey. I have sold it all out; also about 1500 lbs. that I bought. I also took about 500 lbs. of 1-lb. sections. The summer and fall have been so dry that there is no chance for any more surplus this season. My bees will go into winter with plenty of stores, and strong in bees. Our county is about the best in the State, taking one year with another. I have been here 4 years, and there has been no failure of a honey-crop yet. There are so many different trees and plants that suit all kinds of seasons, that there is not much danger of failure.

4—D. M. EDWARDS, 108—150.

Uvalde, Texas, Oct. 9, 1886.

FROM 43 TO 56, AND 1600 LBS. OF HONEY.

I wintered 43 without the loss of one stand. I increased to 43, and got 1600 lbs. of honey. My bees are in good condition for winter, and are working heavily now.

B. J. WARDAN.

Plainville, O., Oct. 5, 1886.

\$40.00 FROM ONE COLONY, BESIDES THE INCREASE OF THREE.

I started with 6 good swarms and 2 nuclei this spring. I increased to 30, and sold 5. I took 646 sections. My 25 remaining colonies are all good and strong, with plenty of honey. From one of my hives I sold \$20.00 worth of bees and \$20.00 worth of honey, and have 3 good colonies left which are worth \$10.00 per colony, making \$70.00 from one colony. Who can beat it? I got 18 and 20 cts. per lb. for my honey.

Connotton, O.

CHARLES E. HARDESTY.

FROM 98 TO 123, AND 12,000 LBS. OF HONEY.

I commenced the season of 1886 with 93 colonies and 8 nuclei. I increased to 123, and have taken 12,000 lbs. of honey—11,500 lbs. extracted, and 500 comb. My honey is all sold; the average price 6 cts.

Shellsburg, Benton Co., Ia.

ROBT. QUINN.

NOT LARGE, BUT SWEET.

My honey-crop was not large, but it is very sweet. I have 50 colonies, and have taken 1400 lbs. of nice section honey. Bees are in good condition, and well supplied for winter.

W. H. MARTIN.

Dunkirk, O., Sept. 20, 1886.

FROM 4 TO 9, AND 850 LBS. OF HONEY.

I had four colonies, spring count. I increased them to nine, and extracted 370 lbs. of light honey, 360 lbs. of dark, and 120 lbs. of comb honey. Total, 850 lbs., all very nice. I am feeding sugar for wintering.

ROBT. J. LATHERS.

Inkster, Mich., Oct. 2, 1886.

FROM 6 TO 11, AND 600 LBS. OF HONEY, AND BLACK BEES AT THAT.

I had six hives of blacks at the beginning of the present season. I increased to 11, and obtained about 600 lbs. of comb honey. There is no bass-wood in this country. Buckwheat sown for fall pasturage was a failure, and bees made no honey after Aug. 1st. I have wintered a few bees two winters, and lost none. I never fed any, and don't know how, nor have I protected them from cold in winter. The first winter I left the interstices between the top-bars open. Last winter I placed some rags in the upper story.

F. A. MINOR.

Marshfield, Mo., Oct. 5, 1886.

50 LBS. PER COLONY.

I do not see how I could get along without GLEANINGS. I think every one who keeps four or five stands of bees should take it.

As our honey season is over I will give you my report for 1886. I commenced in the spring with 40 colonies, and increased to 47. I worked for honey, not increase. I have taken 50 lbs. per colony, spring count, about an equal quantity of comb and extracted. I use the extractor to keep swarming down. Bees have made no surplus honey since the 15th of July. My bees have plenty of stores for winter. Honey is mostly all sold at 8 to 12½ cts. per lb., according to condition and quality. I sell my honey all at home. I make it my rule, when I sell to one of my friends, that, when he gets out, he will know where to come and get more.

Bucklin, Linn Co., Mo.

J. W. SWITZER.

A GOOD REPORT FROM AN A B C SCHOLAR;

156 LBS. PER COLONY, AND 25 INCREASE.

I herewith send you my report for this season. I began with 8 swarms, in good condition, and two very weak, which were used for queen-rearing. From the above 8 swarms I received 1250 lbs. of honey—1170 lbs. in 1-lb. sections, and about 75 lbs. extracted, making 156 lbs. per colony. Besides this I now have 30 good swarms, of which I bought 5 swarms and gave one to our preacher and one to another neighbor, making 27 swarms in all. I attribute my success mostly to the teachings of your A B C book and GLEANINGS, which I prize very highly, and wish you the best of success. Honest endeavor is always crowned with success, which latter I wish you with all my heart, as I never found a squarer man to deal with than

A. J. Root. If hives and fixtures have any thing to do with my success I must attribute it to the Heddon-Langstroth hive, which I use exclusively. I had one swarm which was queenless from Sept. 28, 1885, until June 2, 1886, which makes it 9 months and over. It came through with about a pint of bees. 4—JNO. G. RUNDINGER, JR.—39.

Kilmanagh, Huron Co., Mich., Oct. 18, 1886.

WHAT SHALL BE DONE WITH "THE OLD-FOGY FARMERS" WHO ARE BRINGING DOWN THE PRICE OF HONEY?

We have had a good honey season here, and it is of the best quality. The flow has been steady. I have 100 colonies to go into winter; about 2800 lbs. of my crop is disposed of; about 2500 lbs. on hand. I have not taken all off yet. Prices are ruling low. I think it would be a profitable subject for discussion to decide what we are to do with a "set of old-fogy" farmers and "grandmothers" who persist in running to town and selling their honey for whatever a grocer may offer them, thus ruining the market for those "in the business."

Duncan, Ill.

W. H. GRAVES.

Buy up the honey, friend G., from all these good people, and thus prevent them from demoralizing the market.

MY REPORT FOR THE SEASON OF 1886.

I began with 8 hives of my own, and bought three box hives, which I transferred into Simplicity. I purchased two queens of Jos. Byrne, with $\frac{1}{2}$ lb. of bees with each. I turned loose these two queens and their bees, each into a colony, after taking out old queens. One of these hives and its increase gave me 133 lbs. of honey, and increased to 3 good colonies. I took, in all, 963 lbs. of honey—527 lbs. of this in sections. This honey was taken on pasture that does not yield 20 lbs. on an average to box-hive men. I attribute this success to using your Simplicity hive and implements—a superior knowledge of our pursuit gained by reading, and last, but not least, plenty of hard work to insure success. 3—S. S. LAWING, 12—24.

Henderson, Webster Co., Mo., Oct. 21, 1886.

SWEET CLOVER; A YIELD OF 70 LBS. PER COLONY, FROM THIS PLANT ALONE.

I send you a branch and flower of a plant that has no name. It produces honey of an excellent quality. Our honey crop would have been almost an entire failure had it not been for this plant. It blooms twice a year, but seems to produce more honey in the fall than in the spring. I have 70 hives of Italian bees, and did not get a pound of surplus this year until this plant bloomed about August 20. I have had a yield of 70 lbs. of extracted, and 50 of comb honey per colony, from a flower that I know to be from this plant. I have been watching the honey-yield from it for years, and have concluded it is one of the very best honey-producing plants we have in this locality. It is very abundant here, but is confined to the hills and cliffs. It is never found in the prairies. I am satisfied the yield this fall would have been much larger had it not been so wet and cloudy during September.

J. P. CALDWELL.

San Marcos, Hays Co., Texas, Oct. 12, 1886.

Why, friend C., it is a little funny if the plant you send has no name. It is the common well-known melilot, or sweet clover. I am very glad indeed to get such a good report from it.

NOTES AND QUERIES.

THE MOSQUITOS IN TEXAS.

TEXAS, or some portions of it, have a hard time this year. Great storms on the gulf coast, great drought in the interior of the State, besides the great railroad strike in the spring. Yet some counties are exempt, and Brazoria is one of them, except from storms. The gulf shore suffered a good deal, but crops are good. Cotton and corn are good. It is reported from some parts that bees did not do well; but my report shows 50 colonies in the spring, 60 in October, and about 700 gallons of extracted honey—not so good as last year, but good enough for a bad year. At present we are having a serious time fighting mosquitoes. They are so bad we can't pick cotton or do any thing else here, and we have to build fires to make smoke for our horses, and to milk cows. The animals come to the smoke and stand with their heads right in it. The stock cattle are in great big herds, sometimes 2000 in a bunch, to keep fighting the above pests.

JOHN W. ROSS.

Phair, Texas, October 10, 1886.

A DRONE-LAYING QUEEN.

I have a colony of hybrid bees that have raised all drones in worker-cells. I took all the brood-frames out about three weeks ago, and gave frames of empty comb; but they are still raising all drones. Now, is the queen worthless? or is it the fault of the bees?

M. GUMBERT.

Heathville, Pa., June 24, 1886.

[Friend G., you either have a fertile worker or a drone-laying queen. See A B C, under head of Queen-Rearing, p. 202. A queen that continues to raise drones only is worthless, and she ought to have been destroyed a long while ago.]

IS IT THE NAMELESS DISEASE?

What ails one colony of my bees? For one month the bees at one stand have been fighting little black slick bees, perhaps a little over half the usual size for a bee. It seems to me they must be bred in the hive, for they always look as if they were nearly starved. On dissecting them I find there is no honey in them. The colony is moderately strong.

WILLIAM PICKETT.

Deming, Hamilton Co., Ind.

[I think the trouble is the nameless bee-disease, friend P. The shiny-black bees generally have an emaciated look, something like a big black ant, and they usually have a shaking, tremulous motion when they move about.]

TRANSPLANTING SWEET CORN.

Noticing your enthusiasm on gardening, I will just say I like very much to have early vegetables. I shelled a small ear of sweet corn, made a hole in my hot-bed, and covered it up, to sprout, but before I could get it planted it was one mass of green sprouts and roots. Not wishing to throw it away, I concluded, by way of an experiment, to set it out, and, as a result, I had nice sweet corn for my dinner the 1st day of July.

MOLLIE O. LARGE.

Millersville, Ill.

[Thank you, friend Mollie. I am glad to know that you love garden vegetables as well as honey-plants, and that you have a hot-bed. Now, I am much inclined to think that it would pay to have a small patch of early sweet corn started in the way you suggest, in a hot-bed or greenhouse. We could be away ahead of the market, and get a big price to reward us for the trouble of transplanting. Since you suggest it, I think I shall have to try it on a small scale next season.]

JOBING OUT HONEY.

I am just about to start on my annual trip to job out my honey-crop in the neighboring towns.

Maysville, Ky., Sept. 2, 1886. W. C. PELHAM.

CAN BEES UTILIZE OLD BITS OF COMB?

Why would it not be economy to let bees have the old honey-comb to render up wax for themselves, instead of rendering it ourselves, to sell for 20 cts. per lb.?

ALMON HOLMES.

Douglas Center, Wis., Sept. 30, 1886.

[Bees do use up old bits of comb to some extent, but I believe they generally use the old wax mostly, in place of propolis. I have, however, seen new combs made entirely from old black wax, fixed up, or, rather, scraped off from the bottom-board. When honey is coming in plentifully, there is usually wax enough secreted to furnish all that the bees require in comb-building.]

DOES SEALING HONEY ALWAYS PREVENT CANDYING?

I should like to use some clear glass jars for extracted honey, but I find that, if the honey candies, its sale is much reduced, besides spoiling its appearance. I am positive that, if honey is sealed while hot, it will not candy, as I have some in Mason jars a year old.

G. WIEDERHOLD.

Yonkers, N. Y., Sept. 15, 1886.

[The matter you mention is one of the contested points, friend W. Our experiments indicate that honey, perfectly sealed up as we do fruit, when it is heated pretty nearly to the boiling-point, never candies until the sealing is loosened. But others say that some samples of honey will candy any way, no matter how carefully it is sealed up. I believe the tendency now is in favor of clear flint-glass jars for holding honey.]

WHY DO THE BEES SWARM IN AUGUST?

The goods came in good shape. The sections are nice, the nails are very nice, the labels and rubber stamp just please me; in fact, every thing is all satisfactory. Mr. Root, can you tell me the cause of bees swarming at this time of year? The last week in August I had four swarms come out, which is something I never had nor saw before.

S. W. GREEN.

North Greenwich, N. Y., Sept. 6, 1885.

[Friend G., I think that swarming in August is owing to a good yield of honey, and may be the good yield of honey you have had is what makes you so well pleased with the goods we sent you. Your orders were filled just as we fill all of our orders. Still I am very glad to know the things you received from us were satisfactory.]

TOBACCO COLUMN.

MY brother, F. H. Chapin, of Hinsdale, N. Y., has started me in a limited way in the bee-business, furnishing me a nucleus of Italians. My experience with them thus far is to try to subdue their angry passions as far as possible; and by watching his movements I saw the smoker had quite a cooling effect; and he also, my next-door neighbor, informs me of your generous offer of one of those articles to the person who quits tobacco. After having been an inveterate smoker for a good many years, I have now gone without it for over a month, and think I can stand the storm, as I have now got so I can sleep well, which I could not do after first giving it up. Mark price, if I should later break the contract. In looking into the top of a hive recently, I discovered a good many little small black ants. What effect have they, if any, on the colony?

Ashtabula, O., Sept. 9, 1886. A. H. CHAPIN.

See Ants, A B C book, page 10.

ANOTHER FRIEND TAKES THE PLEDGE.

I have quit the use of tobacco. If it is any pleasure to you to give a smoker to any one to abstain from the use of it, I will gladly receive one from you, and promise to pay \$1.00 if I commence the use of it again.

JOE HEAD.

Trenton, La., Sept. 15, 1886.

HAS USED IT FOR 30 YEARS.

After having used tobacco for over thirty years I have quit it, and never intend to use it in any form as long as I live. If you will send me a smoker I shall be very thankful, and will pay for it if I ever resume the filthy habit.

WM. FINLEY.

Palma Sola, Manatee Co., Fla., Sept. 13, 1886.

GOING SECURITY FOR A NEIGHBOR.

I sold bees to a neighbor. He has smoked since he was 12 years old. I persuaded him to stop, saying you would send him a smoker. He has promised to stop, or pay you for the smoker if he begins again. I will go his security.

D. W. MOORE.

Pelham Union, Ont., Can., Sept. 1, 1886.

IN BEHALF OF A NEIGHBOR, AGAIN.

I again come to you for a smoker on behalf of a neighbor of mine, who is now going into the bee-business. He was an inveterate user of tobacco, and now for two weeks has quit. He wishes a smoker; and if he begins the use again he will pay for it, and I vouch for him.

L. B. POLK.

Selden, Ohio, Oct. 5, 1886.

ONE MORE JOINS OUR RANKS.

I have made up my mind not to use tobacco again; and if I do I will pay you for the smoker.

Wheatland, Mich. A. W. SPENCER.

HAS USED IT FOR 20 YEARS.

My father, who is about 59 years of age, has been smoking for 20 years. He promises never to use it again, and asks you to send him a smoker. If he ever uses it again he will pay you for it.

Oriole, Pa., Sept. 12, 1885. G. W. CLARK.

HAS BROKEN HIS PLEDGE.

I am sorry to say that John Goodhull has already broken his pledge, and commenced chewing. I enclose the pay for smoker. He, while plowing for wheat with a three-horse team, and working hard while hot, thought he could not stand it.

Williamson, N. Y., Sept. 13, 1886. C. S. ADAMS.

I understand that you send a smoker to all persons who have quit using tobacco. I have quit; and if I use it again I will pay for it.

A. B. HEISER.

East Germantown, Ind.

One of my neighbors, Crawford Lentz, has quit the use of tobacco, and wants a smoker. Mr. L. is one of our good men, and means just what he says. He will pay double for the smoker if he uses the weed again.

JAS. W. ROSEBERRY.

Kent, Mo., Sept. 23, 1886.

"A LITTLE FRIEND" HAS QUIT TOBACCO.

A little friend of mine, seeing your promise to give a smoker to any one who would quit the use of tobacco, has quit it. It has been three months since he used any. His name is George Williams. He asked me to write for him, and have you send the smoker to me; and if he ever uses it again I give you my promise to pay you for it myself.

W. A. SISTRUNK,

White Sulphur Springs, Ga., Sept. 18, 1886.

OUR OWN APIARY.

THE CONDITION OF OUR BEES FOR WINTER.

IT is with some reluctance, coupled with no little regret, that I inform our readers the exact condition of our bees for wintering. They are not, to my notion, in the best possible condition for the coming cold weather. A large number of our colonies are weak; not only that, but a large number have no young bees—one of the prime essentials for successful wintering. You ask, "Why this state of things?" I will explain. In the first place, you are all aware that we have had foul brood pretty generally in our apiary. In our efforts to exterminate its ravages we have burned up something like three or four hundred frames of brood. Such a drain as this in our apiary has necessarily left many of our colonies with a great number of old bees. Up to date we have had 60 cases of foul brood. In many instances the taking-away of the brood and honey, followed by 48 hours of starvation, seemed to so discourage the bees that they were slow to overcome the shock. When the treatment was applied in July and August, they recovered in a great measure; but as by far the larger part of the diseased colonies were treated in September and October, few if any of said colonies commenced brood-rearing again, even after feeding. In a word, then, this means that about one-quarter of our colonies have nothing but old discouraged bees. Besides these, about one-fourth more are, well—nuclei on four frames. Again, you will ask, "Why not double these up?" This we have done in a few cases; but there are two reasons why we shall not double up all. In the first place, these nuclei have valuable queens, none of which we value less than \$2.00, and some are worth much more. To unite these nuclei would leave one surplus queen. On account of foul brood we can not sell or otherwise dispose of her. It is true, we could cage and place her over a cluster of bees. She might live a month or possibly two months; but as the ball of bees changes its position in the brood-nest in cold weather, her majesty might be left high and dry where she and her eight or ten bees could enjoy (?) a good freeze by themselves. There are about fifty colonies in our apiary that would stand uniting very comfortably, but that would leave a surplus of 25 queens, worth about \$50.00. Taking every thing into consideration, we prefer to risk the queen and their colonies as they are.

There is still another reason for not uniting more generally. I told father that, if I could have a spell of warm weather, by feeding to stimulate brood-rearing I *believed* I could start foul brood in many of the colonies. That is, the germs of foul brood are in many apparently healthy colonies; but in the absence of brood in October, the disease was not apparent. If this be true, to unite very extensively would be apt to spread foul brood all over the apiary.

Now I confess I have taken a rather discouraging view of this existing state of things. Let us look at the other side for a moment. Those bees have all been fed up on sugar syrup of the best kind. They had been allowed to consume most of their natural stores before being fed, and it may be possible that they have consumed their diseased honey, if they had any. Again they have been contracted on as

few combs as possible, consistent with sufficient stores, and given good wheat-chaff packing—in short, the best care we know how to give them, and so we hope for the best.

FEEDING AFTER DARK, BY MOONLIGHT AND LANTERN LIGHT.

As I have before stated, in consequence of foul brood we have been obliged to exercise extreme caution to prevent robbing. While examining colonies during warm days we have used the bee-tent with excellent success; but to feed by the aid of the tent, sunny days would be quite inconvenient, and well nigh impossible. If we waited till cold weather, that would be too late; besides, the bees would then be little inclined to carry the feed into the combs. It so happened about this time, Oct. 12th to 15th, we were having beautiful evenings, the moon being full at this date. The apiarist and myself availed ourselves of this opportunity, and fed all such colonies as were needy. We could not have had a lovelier time, no robbers to bother us or follow our feeding-cans about. We fed in this way about two barrels of sugar made into syrup. After the 15th, the moon did not come up till about 9 o'clock; and then as the bees still needed more feeding we were obliged to use artificial lights. As lamps go out too easily, we used lanterns. I gave the apiarist my large lantern, and then mother and I hunted around in the house till we found what we call Huber's lantern. I believe they are called "babies' lanterns." That was so insignificant I hardly thought it would do.

"But," said mother, "this is all we have in the house."

"Well," said I, "fix it up the best you can, and I'll try it."

I will explain to our readers, that the lantern in question is about 7 inches high, with a very small burner—a sort of lantern and night lamp combined. After I had worked awhile in the apiary I decided that it was just the thing. It was so small that it could be set down on top of the frames of the hives, or on a ledge of the hive. Its smallness, and, consequently, its using so little room, is why it is superior to the other lantern for night work in the apiary. We fed with lanterns about two barrels of syrup, and I do not think the lanterns caused us any more trouble than smokers in the day time. Not only did I do feeding by this kind of light, but I hunted queens, and performed various other little manipulations with the hives. Of course, on cool and chilly evenings it would not be policy nor even an advantage to work with the bees; but at that time of the year, when robbers are most troublesome during the hours of the day, a great many of the operations connected with the apiary can be performed easily and safely in warm clear evenings by moon light or lantern light. In the A B C of Bee Culture, under the head of "Robbing," the author lays special stress upon the fact that bees can be handled in the night time; but for some reason but few reports of it have come in, and those, I believe, of unfavorable character. The A B C recommends the use of a lamp and shade. As a lamp would require such careful handling, and besides would be likely to be blown out by a little breeze, I think a lantern would give results entirely satisfactory. If, then, our friends will use a lantern (which will stand tumbling about and all kinds of winds), I think they will find certain kinds of night work in the apiary a success. It is quite likely, on the first evening, if

you try it, you will not look favorably upon it; but further trials, I think, will convince you that it is a nice time to do certain kinds of work.

Before closing this subject, let me say that the beginner with three or four colonies will probably never have occasion to resort to night work; but the extensive apiarist will find it a great convenience many times.

HANDLING BEES IN THE RAIN.

One day, while the apiarist and myself were working in the apiary, it began to rain—not very hard, but enough to drive all flying bees in, and to render the use of the tent unnecessary. As there was “lots of work to do” I said to Mr. Spafford,—

“If you are not afraid of the rain, I’m not. No robbers will bother us now, and we can just ‘smash through’ the work.”

“All right,” said Mr. S., with his usual pleasant thanner; he always acquiesces when a new scheme is proposed.

We had on rubbers and old clothes, and so did not mind the wet. Although it rained nearly all day, we accomplished a good deal of work. We kept up a brisk circulation, and at night changed our clothing. On one or two other days we worked in the rain, but put on our gossamer coats. These, with suitable hats and rubbers, kept us nice and dry.

“How about the smoker-bellows?” perhaps you inquire. Our Clarks have been pretty well soaked once or twice, but I do not see but that they work just as well as before. “How about the bees?” possibly a beginner asks. Just as they always do—if any thing, a little more passive. It is a well-known fact, that, during a hard wind and rain storm, when a hive-cover has been blown off, the colony may be drenched, and no harm result to the bees.

I think hereafter, when a little rain comes and I have some work among the bees I want to do, I will put on a gossamer and rubbers, go about my work as before, and let it rain.

If I were to moralize upon this point I would say that any man who would be driven indoors from his work by a light rain ought not to obtain a full measure of success. Of course, if one is consumptive, or it be a heavy rain, then the circumstances are altered; and in either event it would be wise to seek shelter. But I said I wouldn’t moralize, and Barney says my space is growing small, so I will leave you to reflect upon what good things I might have said.

FOUL BROOD UP TO DATE.

There is no foul brood in the apiary, nor has there been any for the last ten or fifteen days. If it were not this particular time of the year, we should feel that we had entirely eradicated the disease; but as brood-rearing has wholly ceased in all the hives, with a few exceptions, there is, in fact, nothing for the disease to work on. ERNEST.

P. S.—As regards the appearance of foul brood—W. Z. Hutchinson’s description of it (see p. 845) is exactly right. At least that is what our foul brood looked like. E. R.

The annual meeting of the Madison County (N. Y.) Bee-Keepers Association will be held at the Eagle Hotel, Oneida, N. Y., Wednesday, Nov. 17, 1886. A very interesting meeting will be had; all members, and those interested in bee culture, are requested to be present, as important business will come up for consideration. Officers for the ensuing year will be elected. The important topic—“How to make the business pay in a poor season like the one just past,” will be carefully considered and discussed. All are invited to bring articles pertaining to bee culture for exhibition. F. L. SMITH, Pres.
Oneida, N. Y.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,

EDITOR AND PUBLISHER.

MEDINA, O.

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For Clubbing Rates, See First Page of Reading Matter.

MEDINA, NOV. 1, 1886.

Let all things be done decently and in order.—I. COR. 14:40.

WE have, at this date, Nov. 1, 5979 subscribers.

OUR EXCHANGE DEPARTMENT FOR ADVERTISERS.

INASMUCH as many have called attention to the fact that our Exchange Department is being used for regular advertisements of things for sale, we think best hereafter to have that department devoted exclusively to articles for exchange—not for goods offered for sale in the regular way, and we greatly prefer that the friends would cut them down to five lines each and no more.

NO BROOD IN NOVEMBER.

DON’T be alarmed, A B C friends, if your queens do stop laying during this month; in fact, it would be the exception if you do find brood; therefore you need not be in haste to call them queenless. Almost all colonies cease brood-rearing during October, November, and December. Very strong colonies, abundantly supplied with stores of every kind, many of them will commence brood-rearing about the first of the year, and it will then be kept up, as a rule, until spring.

BASSWOOD-TREES, GRAPEVINES, RASPBERRIES, ETC.

PERHAPS there is no better season in the year for planting out the above, than this present month of November. We have a beautiful lot of basswood-trees growing on our cultivated and enriched soil. They have made a wonderful growth this season, and the roots are immense.

Our supply of Concord grapevines for shading bee-hives is not so large, but what we have are extra nice vines. This same cultivated and enriched soil has given us some extra nice Gregg raspberry roots. The Gregg and the Cuthbert are, perhaps, the most promising for both honey and fruit. We can furnish extra strong roots, 10 for 60 cts., or 100 for \$3.00. If wanted by mail, 3 cts. each extra. For prices of grapevines and basswood-trees, see our regular price list.

ERNEST’S TEMPEST LANTERN.

AFTER reading what Ernest has to say about working by lantern light in feeding bees, it occurred to me that you might like to know that the lantern he takes such a liking to is on our 50-cent counter. As they are quite small, I think there will be no trouble about sending them by mail at an expense of 10 cents extra for postage. At any rate, I will guarantee safe delivery at the above price. No accident can possibly happen to these lanterns, for they are made entirely of brass, and the oil-reservoir is filled with cotton. If you should drop it and

step on it you might spoil your lantern, but you could not easily set any thing afire. They are made expressly to use in barns and stables. Fill the lamp with a heavy kerosene of good quality. They are not only safe, but they are durable and cleanly. No accumulations of smoke at the top can stop the draft.

LETTERS, FIGURES, ETC., BUILT IN HONEY-COMB.

At the Indianapolis Convention there were some exhibits in this line, probably superior to any thing that has ever been produced before in the world. Large letters that all could read the whole length of the great hall were beautifully worked out in honey-comb of pearly whiteness; also the figure of a mammoth queen-bee; and, astonishing though it may seem, words written in penmanship, even to the hair-strokes, were composed of honey-comb built by the bees. I believe the work was done by Mr. A. Cox, of White Lick, Boone Co., Ind. The exhibit of honey in globes, honey in the form of crosses, and honey in almost every shape imaginable, was wonderful. One end of the hall was literally filled with devices and implements. I do not know whether it suggested to Bro. Newman his museum or not; but it reminded me vividly of our museum.

FOUL BROOD; IS IT CONTAGIOUS?

At the Indianapolis Convention, one of the bee-friends related the following: He found three colonies in his apiary, affected with foul brood. Not knowing just what to do, he decided to look the matter up and treat them according to the most approved methods. Meanwhile the honey-flow stopped, leaving him with a large number of partly filled sections. In order to finish these sections he decided to extract a lot of honey from his heaviest hives, and feed it back; and before he knew it he had unconsciously or heedlessly extracted the honey from some combs in one of these foul-broody hives. The lot of honey containing some from this diseased colony was fed to 23 colonies before he became aware of what he had done. Now, then, what do you suppose happened? Why, every one of the 23 hives thus fed became at once diseased. I tell you, my friends, I would not go to bed, knowing that I had in my apiary a colony that had the real foul brood. Burn up the combs, brood, and honey, and do it in such a way that not one solitary drop or fraction of a drop of honey escapes where a bee may get a lick at it.

SENDING POSTAGE-STAMPS IN LETTERS.

We can always use postage-stamps where they are more convenient, and we can use them of any denomination, providing you do not stick them fast to your letters. The clerk who opens the mails insists that some of you are thoughtless enough to paste them right over the reading-matter before you send them off. We suspect, however, that it is not so bad as that, but that you are a little careless in putting them in the letter, as they are often sticky in warm weather. Do you wonder we sometimes get cross when we have to soak the letters in water over night in order to get the stamps loose? and then we have to put on some more gum before we can use them. Well, we don't mind this trouble very much; but when the water blots your letters so they can not be read without a good deal of fuss and trouble, we sometimes feel as if we should get mad, if it were not for the fact that we are Christian people here,

and don't dare to. Now, then: When you send stamps again, please wrap them in a separate piece of paper, without any writing on it; and if it is not asking too much of you, don't wrap them up when they are sticky. Lay them somewhere in the sun, and let them dry first.

A NEW BEE-KEEPERS' MEDLEY.

MR. E. O. TUTTLE, of Bristol, Vt., has been, for some time back, busy in getting up a new medley of bee-keepers. The size is $8\frac{1}{2} \times 11$ inches, and it contains pictures of 120 bee-keepers. A large portion of them are the same as appeared in our medley, published some ten or twelve years ago. Some of the pictures are very good, and a few of them are rather poor. The medley, however, ought to be well worth the sum of \$1.00 to any one who is in the habit of reading our bee-journals. Among them we notice S. Corneil, R. McKnight, J. B. Hall, D. A. Jones, and W. F. Clarke, of Canada; in the United States we have Henry Alley, John Aspinwall, A. J. King, T. G. Newman, R. L. Taylor, Dr. C. C. Miller, Charles Dadant and son, H. D. Cutting, W. Z. Hutchinson, J. E. Pond, N. W. McLain, O. O. Poppleton, E. M. Hayhurst, L. C. Root, Mrs. Jennie Culp, Mrs. Chaddock, Mrs. Harrison, Oliver Foster, I. R. Good, M. H. Hunt, Norman Clark, P. L. Viallon, W. S. Hart, O. M. Blanton, and others. In the above list I have not intended to name those that are contained in our old medley. A descriptive pamphlet of 14 pages accompanies the photograph. They may be ordered from this office, or from friend Tuttle, as you choose.

HALF-POUND SECTIONS IN ENGLAND.

We find the following in the *British Bee Journal* for Oct. 14, under the title of "six-penny sections."

SIX-PENNY SECTIONS.

One of the most striking features of the show of Canadian honey at the Colonial Exhibition is the thinness of the sections exhibited, being only $1\frac{1}{2}$ inches, the combs built therein being of weaker thickness. Mr. Jones assures us from his own experience, and it would be a bold British bee-keeper who would venture to compare his own with that of Mr. Jones,—that, contrary to what might be expected from the fact that three vertical surfaces (midrib and two sealings) are required in each inch instead of three in each $1\frac{1}{2}$ inch, a larger harvest is obtainable of this thickness than of the greater thickness to which we are accustomed in the ordinary two-inch sections.

In our issue of March 1, 1885, in an article entitled "Sections, Past, Present, and Future," we suggested the very same idea, pointing out that, by adopting the size of $4\frac{1}{2} \times 3\frac{3}{4} \times 1\frac{1}{2}$, we could obtain sections of nominal half pound, which could be sold retail at sixpence each. The Canadian sections are as nearly as possible this size. We went on to say, "We venture to think that, before many seasons are passed, a six-penny, or $\frac{1}{2}$ -lb. section, will be a recognized size."

The British bee-keepers did not take to the idea, probably because the dealers could not supply the sections, and would not order them. Our Canadian cousins, however, took the hint; and while some of us are complaining of the slow sale of 1-lb. sections at 1 shilling, and have altogether neglected the nimble sixpence, they have been producing these pretty little sections, and here they are before our eyes. When we now see the very thing which was suggested to us in our own journal eighteen months ago, and hear that actually a larger harvest can be obtained in that form, it comes upon most of us as a complete revelation. We repeat, with great confidence, our prediction of March, 1885, and look forward to its fulfillment before another year has passed.

The show referred to by the editor took place Oct. 6. From the reports of the association I judge it must have been extremely interesting, especially as they had our good friends D. A. Jones, S. Corneil, McKnight, and others, of Canada. During the association friend Jones gave them a description of the Heddon hive. We notice there were present at the meeting, Wm. Raitt, of Scotland, and some from Switzerland. Of course, friend Jones had to have some fun going on, even if he was among long-titled people, and he improvised the following stanza:

Canada is a great country for honey;

It is there farmers and bee-keepers make lots of money.

Our bees extract nectar from flowers so sweet,

That all nations consider our honey a treat.

BEE - KEEPER'S GUIDE;

Or, MANUAL OF THE APIARY.

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14th THOUSAND JUST OUT!

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More than 50 pages, and more than 50 fine illustrations were added in the 8th edition. The whole work has been thoroughly revised, and contains the very latest in respect to bee-keeping. It is certainly the fullest and most scientific work treating of bees in the World. Price, by mail, \$1.25. Liberal discount to dealers and to clubs.

A. J. COOK, Author and Publisher.
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FOR EARLY QUEENS,

Nuclei, and full colonies. The manufacture of hives, sections, frames, feeders, foundation, etc., a specialty. Superior work and best material at "let-live" prices. Steam factory, fully equipped, with the latest and most approved machinery. Send for my illustrated catalogue. Address
5tfid J. P. H. BROWN, Augusta, Ga.

I order that I may pay off my debts, and devote my whole time to preaching the gospel, I offer my entire apiaries, consisting of about 90 colonies of Italian and hybrid bees, 60 empty hives, 3 extractors, and other bee-supplies, for sale at a great sacrifice. Persons wishing to buy would do well to correspond with me immediately. I must sell.
21tfid JAS. ERWIN,
Smith's Grove, Warren Co., Ky.



379 FRUIT TREES
VARIETIES Vines, Plants, etc.
Apple, Pear, Peach, Cherry, Plum, Quince, Strawberry, Raspberry, Blackberry, Currants, Grapes, Gooseberries, &c. Send for Catalogue
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Barnes' Foot-Power Machinery.



Read what J. I. PARENT, of CHARLTON, N. Y., says—"We cut with one of your Combined Machines last winter 50 chaff hives with 7 inch cap, 100 honey racks, 500 broad frames, 2,000 honey-boxes and a great deal of other work. This winter we have double the amount of bee hives, etc., to make and we expect to do it all with this Saw. I will do all you say it will." Catalogue and Price List Free. Address W. F. & JOHN BARNES, 68 Ruby St., Rockford, Ill.

When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. ROOT.
23tfid

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

16-page Weekly—\$1.00 a year.

Sample Free. THOMAS G. NEWMAN & SON,
925 West Madison Street, Chicago, Ill.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad. in this department, or we will not be responsible for any error. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates.

THOROUGHbred fowls, Brown Leghorns, S. S. Hamburgs, W. C. B. Polish, P. Rocks and Wyandottes, Bonney's, Forbes', Hawkins', Wilcox & Fultz' strains. We will sell for cash, or exchange for fdn. and beeswax. Price list free.
18-19tfid A. H. DUFF, Creighton, Ohio.

25 STANDS of Italian bees for sale in new chaff hives at \$7.00, in good shape for winter.
20-21d JOHN C. STEWART, Hopkins, Mo.

WANTED.—To exchange my Given fdn. mill, good as new. I will take honey, or good winter apples for it.
L. BECKWITH, Berlin, Wis.

WANTED.—To exchange strawberry-plants, six varieties, for untested queens.
20-21d J. A. GREEN, Dayton, Ill.

WANTED.—To exchange for extracted honey, 5 chaff Eclectic hives, just as good as new, or for cash, at \$2.00 each—a bargain.
20-21d F. HOLTKE, Carlstadt, N. J.

WANTED.—Honey, extracted preferred, in exchange for hives, frames, section boxes, saw-mandrels, and bee-hive machinery. What have you got, and what do you want for it?
20tfid D. S. HALL, So. Cabot, Vt.

WANTED.—To exchange for cash, or good horses and mules, 200 colonies of bees in Simplicity frames; also 40 acres of land adjoining the city.
20tfid ANTHONY OPP, Helena, Phillips Co., Ark.

FIRE! Fire! Fire! Brother bee-keepers, you all want my LIGHTNING FIRE-KINDLER, costing about the same, almost as necessary, and but little more trouble, than matches. Perfectly safe. No litter. Time, temper, and match saving; household convenience. It makes a fire immediately. Lasts a lifetime. Just the thing for your smokers when made one-fourth of the common size. Sent by mail for 20 cts.
20tfid S. S. BUTLER, Los Gatos, California.

WANTED.—To exchange fine bronze turkeys, Brown Leghorns, or American silver watch, 3-ounce case, cost \$18.00 when new—No. 1 time-keeper, for ferrets.
21d CHAS. McCLAVE, New London, Ohio.

WANTED.—To exchange bees for land south of the Ohio River. Also for sale, about 120 lbs. of wax and a six-inch Pelham fdn. mill.
M. J. HARRIS, Clay City, Clay Co., Ill.

WANTED.—To exchange for extracted white clover or basswood honey, one foot-power saw; also one Pelham foundation-mill, with dipping-tank, etc., nearly new.
21tfid W. S. WRIGHT,
365 W. Van Buren St., Battle Creek, Mich.

\$2800 will buy the Alderbrook poultry-farm and apiary ground, 30 acres of good land, cozy house, barn, and poultry-house, all new, pure spring and running water, fronting on beautiful pond, 2 miles from R. R. A delightful home; terms easy.
J. E. DARROW & SON, Box 250, West Eaton, N. Y.

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One-Piece Sections, Section Cases, Frames, &c.,

OF SUPERIOR WORKMANSHIP, FROM

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Manufacturers of and Dealers in

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Send for Price List.

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It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, 1910 Germantown Ave., Phil'a, Pa.; E. Kretschmer, Coburg, Iowa; Elbert F. Smith, Smyrna, N. Y.; D. A. Fuller, Cherry Valley, Ill.; Clark Johnson & Son, Covington, Kentucky; J. B. Mason & Sons, Mechanic Falls, Maine; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.; J. A. Humason, Vienna, O.; G. L. Tinker, New Philadelphia, O.; J. M. Shuck, Des Moines, Ia.; Aspinwall & Treadwell, Barrytown, N. Y.; Barton, Forsgard & Barnes, Waco, McLennan Co., Texas, W. E. Clark, Oriskany, N. Y., and numerous other dealers.

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In accordance with a previous notice in bee-periodicals, I am now prepared to fill orders for the seed of the above plant at the following prices: 1/2 oz., \$1; 1 oz., \$2; 2 oz., \$3; 4 oz., \$5; 1/2 lb., \$8. One oz. contains from 1600 to 1800 seeds. On account of extreme drought my stock of seed is limited, and persons ordering will be served in rotation. The seed should be sown in the early spring, and general directions for cultivation will be given on each package.

This plant is not an obnoxious weed, and is as easily eradicated as clover. Having carefully watched its habits of growth, and its honey-producing

qualities for the past six years, I believe those who commence its cultivation in a liberal way will be better pleased than by commencing with a small quantity of seed. It has been tested by prominent bee-keepers all the way from Vermont to Nebraska and Ontario. We refer to the report of the committee appointed by the North-American Bee-Keepers' Association held at Detroit in 1885. The committee reported at the Indianapolis, Ind., convention held Oct. 12th to 14th, and their report will be found in all bee-periodicals publishing the report of that convention.

Write all orders plainly, and give your postoffice address in full.

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Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

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Sept. 1, 1886.

Jan. 1, 1887.

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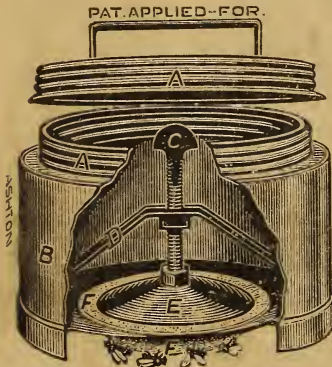
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Prices for sample Feeder, by mail, postage paid,

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Any will price to be these books on which postage is not given forwarded by mail, *postpaid*, on receipt of the books, as every thing else, we are liable for disappointment, if we make a purchase without the article. Admitting that the bookseller had all the books he offers, as he has them for sale, he would be expected he would be disappointed. I very much desire that those who favor their patronage shall not be disappointed. Therefore I am going to try to prevent it by mentioning all the faults so far as I can, that the publisher may know what he is getting. In the following list, books that I approve I have marked with a *; those I especially approve, **; those that are not to times, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §.

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1	bles and Allegories. The most beautiful piece in the way of a book that I have ever sold, and I do not think it is the handsomest book I ever saw. It is a book of 512 pages, full of engravings of surpassing beauty and printing are probably equal to any other way of a book now in the market. Our readers will find the fables and allegories about "Well, about you and me." As an illustration, in the center you will find the fable of the Lantern people, which I gave on p. 38, May 15, 1885. I copied the story, but I did not have the wonderful pictures that the author has in this book. The book is written by the author of the Story of the Bible. There is but one fault to find with it; that is, it costs \$2.00. However, if any of you want a book worth \$2.00, every cent of it, you will find it in this book of fables and allegories. It will make you cry, if you don't look out; and the best of it is, that the chances are very great that you will be better after you have cried. I never saw any thing in my life, nicer for a Christmas present; or if you want a beautiful book to put on the center-table of your best room, you can not find a handsomer one for the money. Perhaps I am saying a good deal; but if you do not agree with me after you have seen the book, you can send it back and have your money returned. They are so large and heavy that the postage on them is 32 c. extra. We can sell two books for \$1.75 each; three for \$1.65 each; five or more, \$1.60 each.
6	First Steps for Little Feet. By the author of the Story of the Bible. A better book for young children can not be found in the whole round of literature, and at the same time there can hardly be found a more attractive book. Beautifully bound, and fully illustrated. Price 50c. Two copies will be sold for 75 cents. Postage six cents.
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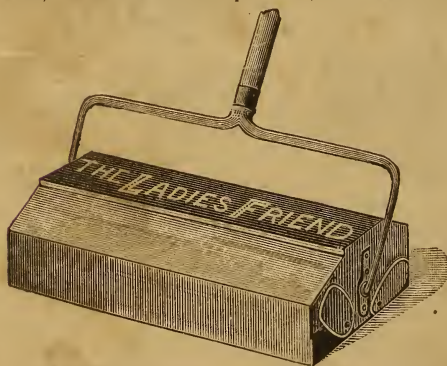


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